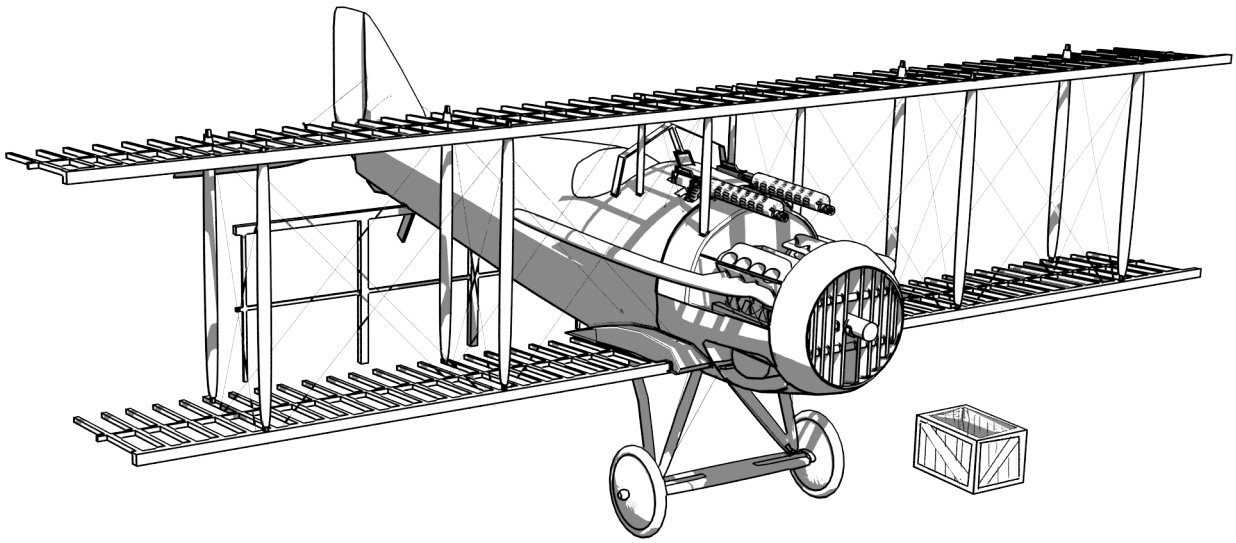
Flying Circus

Aircraft Catalogue

Core



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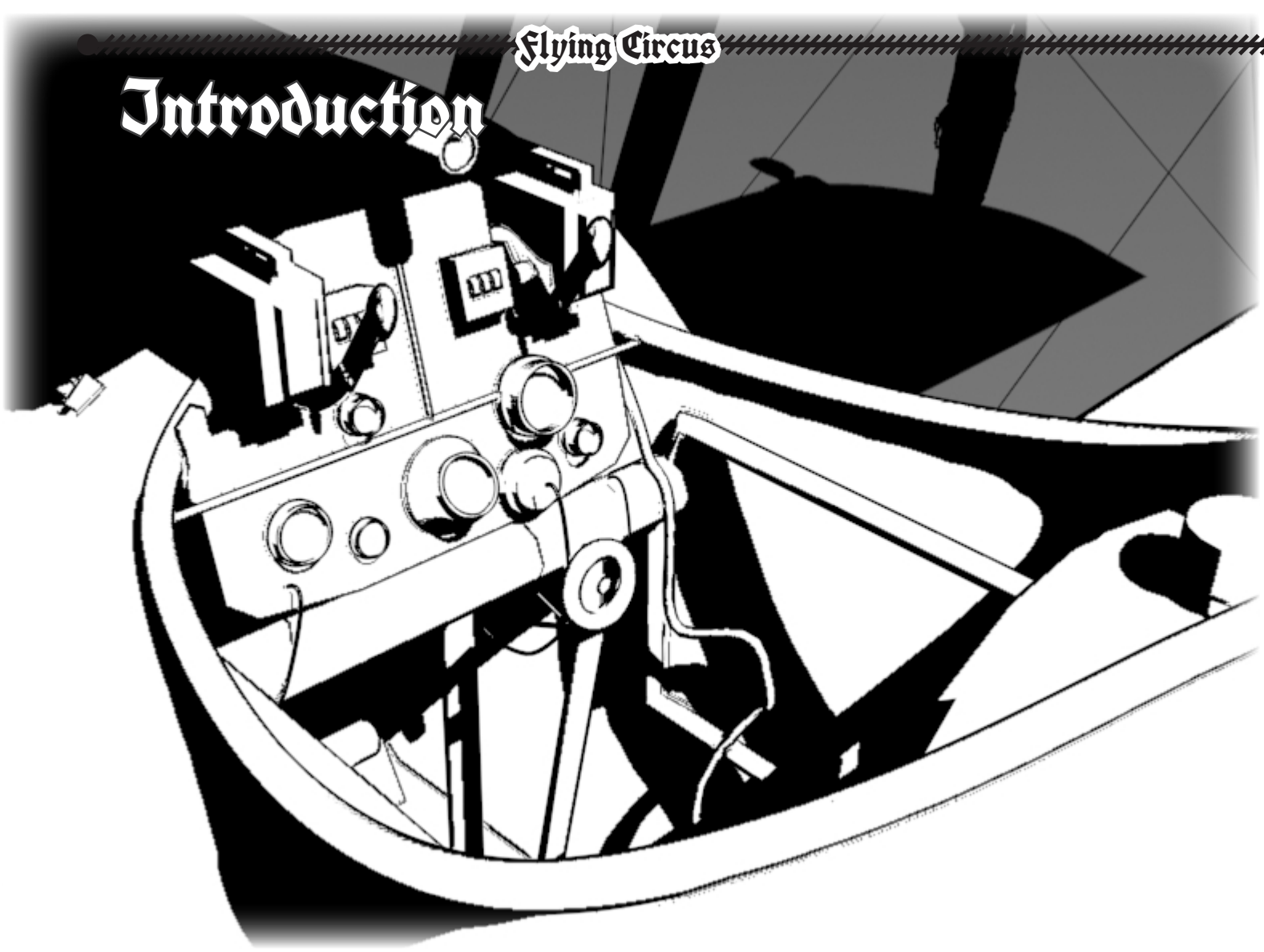
Introduction



How To Use

This document contains 50 aircraft (and 8 NPC aircraft) for use in *Flying Circus*, with profiles, lore, and links to the Aircraft Builder. With it, you can easily play a full campaign with a large variety of unique aircraft, each with their own strengths and weaknesses, history, origin, and role.

When you select an aircraft, fill out your Instrument Panel and Component Cards with the statistics listed. Alternately, you can load the aircraft into the plane builder by clicking the link or loading the aircraft's file, and clicking "Save Dashboard" at the top. This will automatically create filled out sheets you can print and use with your aircraft.

Aircraft Designations

The aircraft contained within are a mix of historically-inspired designs which correspond to real aircraft and fantasy machines unlike anything that ever flew. Early aviation history is filled with bizarre machines: that's what makes it fascinating!

In early aviation parlance, a 'fighter' is specifically an armed two-seat aircraft design to fight other planes, while a 'scout' is a single-seat aircraft, armed or not. Scout is used for single-seat combat planes throughout this document for authenticity.

Aircraft Engineering

You can play the game without modifying anything about any of the aircraft all, but the builder also makes modifying planes easy and quick, once you understand the principles. It might be intimidating at first blush, but with a bit of experimenting you can make airplanes in minutes.

The Variations

It is easiest to learn to use the builder by making one of the variations offered for the aircraft in this book. Bring up its profile in the builder and then make just the modifications you need to change.

For instance, we can convert the Ritter Model F 'Singvogel' to its Model E configuration with just a few simple changes. First, scroll down to the "Tail" section, below "Frames and Covering" and above "Wings". There, you can adjust the length of the aircraft's tail. You can click the 'Rules' section here to see the math that will happen when you do, but you can also just experiment to find out what it does.

Click the drop-down menu and change the tail length from "Stubby" to Standard". Then, scroll down to the "Weapons" section. The Singvogel has 1 Mount of 2 standard Machine-Guns, but the Model E we're modifying it to loses one of those guns. All you have to do is change the number in the "Weapons at Mount" field to 1.

Now, when you scroll to the bottom of the sheet, we have a new aircraft. It carries fewer weapons, and the new longer tail has raised its Stability while lowering its Handling. The new aircraft is much safer now, and might be more suited for characters with low Calm.

New Aircraft

Once you've made a few variations, you can take a crack at making your own airplane. Start by replicating a real life aircraft: go to the Wikipedia page for the Fokker DR.1, for example. Then, go through piece by piece: it has one cockpit, so add it. If you can't find the historical engine, pick something that seems similar.

Be sure to read up carefully how the plane goes together. The Fokker DR.1 is unusual for its era because it is built of steel spars, not wood. Add its weapons, use the Wing Area and Span stats that most aircraft have listed to add the wings, and put the supports in. A careful reading will reveal the aircraft has cantilever supports to hold the wings together.

The builder will require some trial and error to get used to, and there are times where it won't cover every edge case and you'll have to improvise or make judgement calls. Be advised that, for gameplay purposes, it deliberately produces planes 10-20% slower than real life, so don't worry if your aircraft are coming out slower than you expect!

But with a bit of experimentation, you'll be making awesome planes in no time. Make sure you get GM approval before springing a plane into a game, though: the builder is designed to make accurate planes more than balanced ones, so play fair!

Paint Schemes

If you want to decorate your plane all pretty-like, it might be helpful to have some ideas of how a plane might be decorated in-universe.

Farmer Planes

- The plane is a patchwork of mostly unpainted canvas, decades of repairs stitched into the skin in different colours and wears of fabric.
- The plane has been enthusiastically but crudely painted in emulation of a Great War ace. The colours are off and the lines aren't straight, but its a labour of love.
- The plane has been painted a bold, solid colour, like barn red or fence white. It's attention-grabbing, but also probably the only paint the pilot had access to.

Soldier Planes

- The plane is simply an adaptation of a prewar paint scheme of a wartime power, perhaps with the roundels changed. The names of generations of previous pilots are written with great care on the side.
- The plane has a regional camouflage pattern that gives you an idea where the character is from, like snowy white-grey stippling or green and brown tiger stripes.
- The plane is lovingly maintained in expensive dyed lozenge-pattern camo or a complex dazzle scheme that hurts to look at.

Fisher Planes

- The plane has been left in grey-blue primer, old roundels painted over, and was clearly neglected by a community with better things to do.
- The plane is covered in interlocking patterns of runes and symbols, not unlike a fisher's tattoos. At night, these symbols glow faintly, and looking at them makes your eyes water.
- The plane seems plain and unadorned to onlookers, painted a simple, desaturated colour. To the eyes of its fisher pilots, it dances with patterns in ultraviolet paint.

Skyborn Planes

- The plane has elabourately dyed fabric wings with complex interlocking patterns, in bold colours like pink, turquoise, and gold.
- The plane has a highly polished stained wood surface, the grain highlighted.
- The plane has the paint scheme of a former imperial power, buried under hand-painted murals and patterns that have spread across its surfaces.

Believer Planes

- The plane has a carefully designed military paint scheme, with registration numbers for division, squadron, and the individual plane. It was one of eight.
- The plane is covered, front to back, in inspirational or devotional quotes and phrases.
- The plane is painted all over to resemble a flag, such as a republican tricolour.

Scion Planes

- The plane is unpainted, just gleaming polished steel and molded plywood showing the expensive materials in its creation.
- The plane has clearly been painted by a classically trained artist, with murals depicting religious and historical scenes in great detail.
- The plane is rendered to resemble the familiar heraldry, with the same colours, patterns, and imagery.

Student Planes

- The plane was once a militia aircraft, with two bold colours and a jersey number. The pilot's name is inscribed in large, stenciled letters on the side.
- The plane was somebody's art project, with a swirl of abstract shapes and colours in cubist or modern avant-gard style. It clearly has a meaning nobody will understand.
- The plane has an advanced, scientifically-designed pattern of camouflage which is much more sophisticated than available elsewhere, such as real-life flecktarn, strichtarn, or splittertarnmuster patterns.

Survivor Planes

- The plane is unpainted and unadorned. No thought has gone into its aesthetics at all, just primer and rustproofing.
- The plane once carried national colours, but the gas has bleached it out almost entirely, leaving it a ghostly green, mustard, or bone white.
- The plane has been painted with crude murals displaying its pilot's imaginings of the outside world, resembling the fanciful and enthusiastic paintings of a child.

Worker Planes

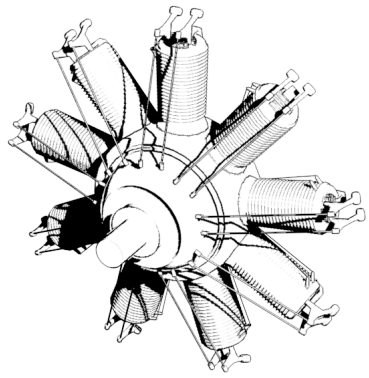
- The plane has been painted in flashy stripes and checkerboards in strongly contrasting white, black, and primary colours to grab attention.
- The plane bears the livery of a different pilot altogether, with somebody else's name, noseart, and kill indicators. A stain in the cockpit indicates how it ended up in the hands of a novice pilot looking for a good deal on a used plane.
- The plane has suffered the attentions of the pilot's children, with haphazard colours, fingerpainted scenes, and bright handprints on everything in reach.

Witch Planes

- The plane is painted with a green and brown pattern designed to make it easy to hide in the woods. Its underside is a sky blue or grey.
- The plane was reprimed and then carefully painted with intricate knotwork covering it back to front, perhaps in bright green or blue.
- The plane appears to be painted in a disruptive pattern, but close inspection reveals that what you thought was plywood is bark, that canvas is in fact overlapping leaves, and the metal is weathering unnaturally and beautifully.

Early Aircraft Anatomy

How exactly early aeroplanes work is fascinating in and of itself, and knowing can help you describe your aircraft in the narrative and make your game more engaging!



Engines

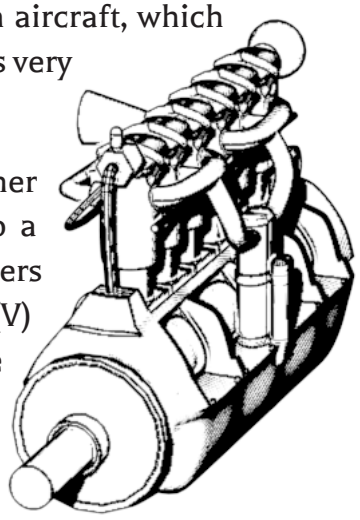
The vast majority of aircraft in Flying Circus are powered by internal combustion engines, like in a car, with pistons in cylinders connected to a crankshaft, burning fuel for power. Engines are distinguished primarily by how they are kept from overheating. Engines can be roughly divided into air-cooled and liquid-cooled variations. Both are used on aircraft, and both have their own strengths and weaknesses.

Air-cooled engines use the passage of air over the cylinders to keep from overheating. They are often arranged as radial engines, with the cylinders laid out in a circle. These engines have the advantage of not needing heavy cooling systems, but the primary downside is that the engine being exposed to the airflow means the engine causes a lot of drag. In the era Flying Circus is set in, there is also the problem that the air just isn't sufficient to cool these sorts of engines running at maximum power.

The clever solution to this is called a rotary engine. These are radial engines mounted backwards, causing them to spin while the crankshaft remains static. The propeller is then simply bolted to the engine. The spinning exposes the engine to more air, making it easier to cool, and this allowed for very light engines with very high power.

Rotary engines do have disadvantages. The biggest is that the engine cannot have conventional oil lubrication, because oil has to be able to move around the engine to stay cool. So instead, it is a total oil loss system, with the oil mixed directly in with the fuel. This requires a kind of oil that will still work when mixed: castor oil. As the engines tended to leak oil very badly, and castor oil can cause diarrhoea...

The other disadvantage is that rotary engines waste a great deal of their power moving the heavy engine around, which decreases their effective output. Additionally, a hundred and fifty kilograms of whirling steel has a gyroscopic effect on aircraft, which does odd things to their handling and tends to make these planes very unstable. It can be exploited for fast turns, but it's dangerous.



By contrast, liquid-cooled engines put a jacket of water (or other coolant) around the cylinder, and run them through pipes to a radiator. Liquid-cooled engines don't need to expose their cylinders to airflow, so they are often arranged in one (inline) or two (V) rows. This is more mechanically efficient and allows the use of superior valvetrains for more power, but liquid engines are heavier and have radiators which add extra drag and are quite vulnerable to damage.

Wings

Most aircraft in this era are biplanes: they have two decks of wings, stacked one atop the other. This configuration has several advantages.

- It allows a greater amount of wing area for lift with smaller, easier to support wings.
- It works well with tension support to create strong frames (see next section).
- It allows high aspect ratios (wings are more efficient when they are long and thin) but shorter wingspans (the shorter a plane's wingspan, the faster it can roll.)

However, biplanes are not without disadvantages as well. Most notably, biplanes have higher drag (because they have more exposed forward surface area) and less efficient lift (because wings close together cause 'shadowing' in the airflow). Thus, biplanes are slower than a monoplane with the same design and equal wing area.

Triplanes, and planes with more wings, allow for an exaggeration of the strengths of the biplane, but also exacerbate the downsides. They were useful only in niche applications.

Struts, Spars, & Piano Wire

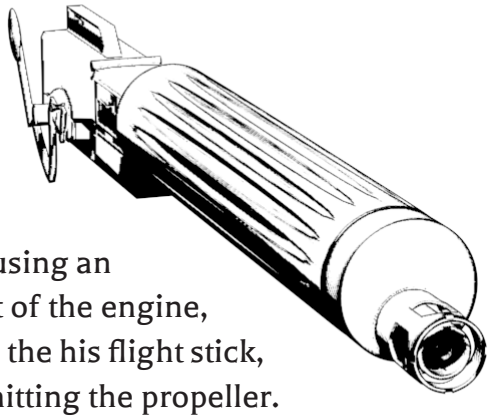
Because of the need to stay very light, aircraft cannot be built the way a building might be. They need to support their weight, and resist the forces of flying, without being able to be built of solid materials.

Thus, early aeroplanes were made as tension structures from a mix of spars and wires. The spars, rigid poles of wood or metal in and between the wings, hold the parts of the plane apart, while the wires, strung in between the spars, pull them together. The same principle is used in suspension bridges.

However, in 1915, aeroplane designer Hugo Junkers invented the cantilever spar, a single solid piece mounted through the wing and braced to resist strain. Not only did this eliminate the drag of the struts and wires, but it accidently made the wing thicker than usual. They didn't know it yet, but thicker wings are actually much more efficient.

Weapons

The majority of aircraft of this era used machine-guns firing rifle ammunition. Typically, they carried one or two, with five hundred rounds of ammunition each in cloth belts. Few planes carried more guns than that.



These weapons could fire through the arc of the propeller using an interrupter gear. This consisted of a cam on the crankshaft of the engine, connected to a trigger. When the pilot pulled the trigger on the his flight stick, the rotation of the cam would fire the gun, timed to avoid hitting the propeller.

These weapons would be supplemented by open-bolt light machine-guns, which were often preferred for being more reliable. Open-bolt action meant they fired too inconsistently for interrupter gears, so they would be mounted on the wings or turrets.

Aircraft Companies of Himmilgard

At one time, Himmilgard was home to hundreds of aircraft design organizations, ranging from cottage industry to massive nationalized corperations.

Arntwerks

Kaiserlandung, Gotha Plateau

Founded by the Brothers Arnt in 1573 to build knock-offs of the popular aircraft of the day, the machines of Klaus, Rudi, and Holger Arnt soon became common worldwide. After the war broke out, they made history for inventing the interrupter gear, but the breakup of their design team ended their creative streak. They still exist, unfortunately, as a nationalized arm of the Goth Armies.

Braun Kitflugzeuge

Free City of Lomende, Daimler Coast

Prewar, the Braun company filled a niche of offering aircraft components at the cheapest rate possible, which allowed smaller nations, municipalities, and private clients to purchase planes for utility and military work. They continued to sell technically impressive, if not particularly innovative, designs to all parties of the Great War until Lomende was destroyed by a self-propagating incendiary in 1600.

Hugo Bennhold

Unknown

The personal corperation of eccentric aircraft designer Hugo Bennhold, little is know about the man or his company, or if he survived the war. It is known that Bennhold designed a variety of revolutionary all-metal aircraft and invented the cantilever spar, but his machines found few buyers and exist today mostly as knock-offs or surviving trial submissions.

Kreuzer Flugzeugwerke

Kaiserlandung, Gotha Plateau

Founded as a crown corperation of the Gotha Empire to bring together several promising designers, Kreuzer was the cutting edge of the Empire's war technologies. However, they have no engine production of their own, and Theler jealously hoarded the best engines, leaving Kreuzer to make excellent airplanes with subpar power plants.

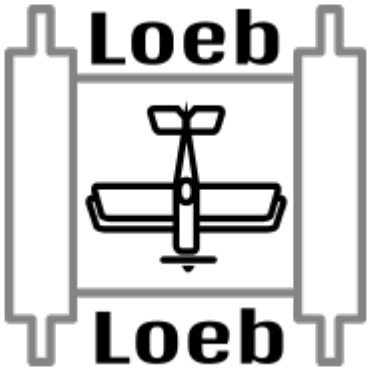
König-Werke

Kohlingen, Voisin Valley

Founded by order of the late monarch King Albert, K-W was the primary manufacturer of aircraft for the Fokker Kingdoms throughout the war, building solid, reliable machines. Being very near to the Dark Sea, they were also the world's premier manufacturer of seaplanes, and had a large canal dug in the city for test flights. The company was gas bombed in 1600 and ceased to exist in any meaningful fashion.

Loeb & Loeb

Körtes, Lohner Forest



A cooperative founded by two brothers, Loeb & Loeb was born in the short-lived East Lohner People's Republic and swiftly annexed into the UWF before the official start of the war. L&L built a series of promising designs, but with the defeat of the UFW by the Gotha Empire, the brothers refused to create any more aircraft, fleeing to Loring and eventually disappearing from records. Their assets were absorbed by Theler.

Markgraf Schwerindustrie

Carpedem, Island of Sopwith

Markgraf Schwerindustrie began life as a company making wire trolleys for the Sopwith government. It was quickly pressed into service to make aircraft for the war effort, and produced a number of excellent machines in conjuction with the Royal Design Bureau. After the war, it has for the most part reverted back to public transport vehicles.

Rathenau

Seraeus, Macchi Peninsula

Among the largest aircraft companies at the beginning of the war, Rathenau was a multinational not unlike Arntwerks or Theler, but unlike those two it closed down its factories in the Gotha Empire and Fokker Kingdom at the beginning of the war, manufacturing and selling to the UFW and Macchi Republic. This principled stand didn't save them from eventual collapse after the arrest of Sebastian Rathenau for attempting to bribe Macchi government officials, leading to the company being acquired by Ritter Flugzeugwerke.

Recht AG

Levamasse, Dorand Lowlands

An agricultural and medical company, Recht began their aircraft production division to create utility aircraft for farming communities. Their line of sky tractors was among the most popular planes in the world at the outbreak of the war, and such was their importance to agriculture that the UWF was slow to shift them to a war footing. The company still exists today in much reduced form, now primarily producing medicine, fertilizer, and pesticide.

Ritter Flugzeugwerke

Westbeke, Schuckert Highlands

Founded around the designs of Astrid Ritter and initially operating out of a small rented hanger, Ritter Flugzeugwerke would survive the collapse of the UFW government, an emergency evacuation to Macchi, and eventually grow to one of the world's largest corporations through a mixture of successful designs, desperate governments, widespread strikebreaking, and hostile takeovers of at least three rivals.

Saft & Altmann Motorbau

Free City of Eisenfluss, Daimler Coast

Originally a company producing generators, SAM pivoted to aviation engines, building some of the best V8 engines on the market and selling them widely. As the wartime push for local production shrunk their client base, they began to produce aircraft as well. While the company no longer exists, much of their tooling has been recovered.

Teicher Flugzeugfabriken

Mitterben, Dornier Delta

In the early history of heavier than air flight, it was generally easier to build heavy aircraft as flying boats, and Teicher specialized in doing so. This experience allowed them to design the world's first practical bombers for the UWF, but their factories were quickly seized by the Fokker Kingdoms and they were reverted to seaplane production.

Theler Körperschaft

Salzkirch, Gotha Plateau

An enormous multi-industry, multinational corporation, and one of the oldest in the world, the Theler Corperation ended up producing aircraft for not just the Gotha Empire in which they were based, and their allies, but for other nations as 'independent subsidiaries'. They pioneered the use of steam molded plywood as an aircraft material and initially built very good machines, but over time the quality slipped due to a focus on mass production. Undeterred, Theler simply bought up enough of the government to ensure they would never lose contracts.

Mitscher Industrie Gesellschaft

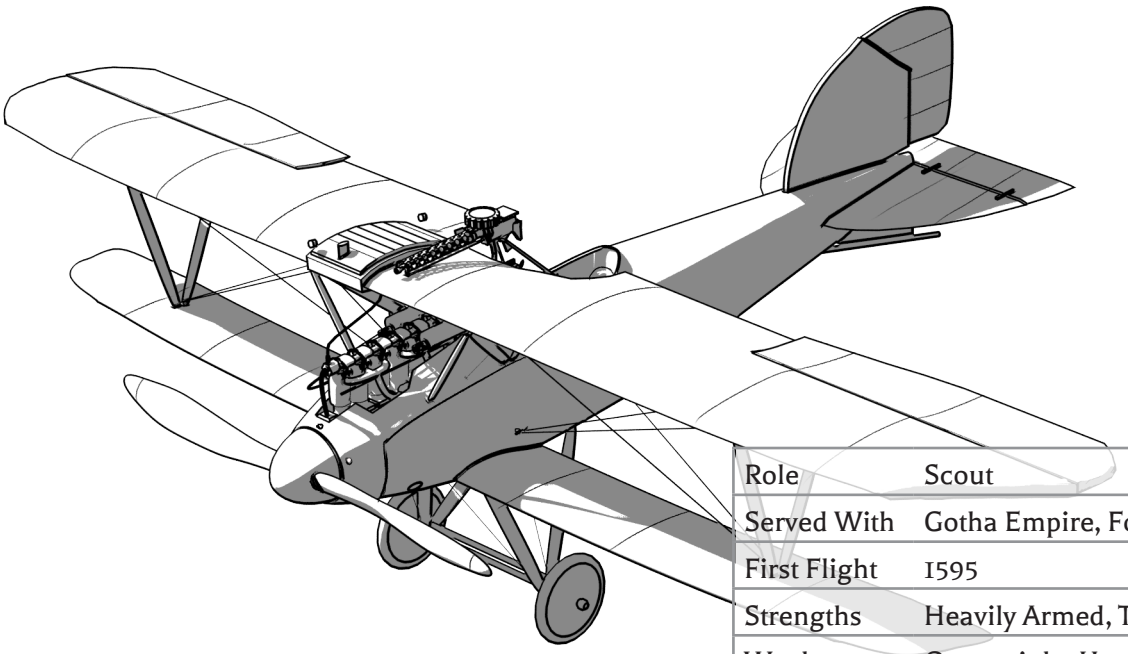
Blackburn, Westsee

Originally a tool and die company, Mitscher Industrial Company (commonly known as MIG) produced artillery, airships, rifles, aircraft, and armoured sky-trains for the UFW. Their aircraft division was untested and poorly staffed, considered less important than their airship yards, and they often had to sell production licenses to Ritter to fulfil government orders. Ritter eventually acquired the division outright, and MIG was broken up when the UFW fell.

von Morgen Flugzeuge

Fürstenberg, Fokker Mountains

Beginning as a manufacturer of transport aircraft during the war, Raphael von Morgen's company was a keen eye for both talent and good ideas, and soon began experimenting with high quality combat aircraft. These new designs were revolutionary, bringing together lessons from across the war into sleek and deadly machines, but very few of them made it into service before the war ended. There are rumours that Raphael von Morgen is still alive and that the company lives on, hidden somewhere in the Fokker Mountains.



Role	Scout
Served With	Gotha Empire, Fokker
First Flight	1595
Strengths	Heavily Armed, Tough
Weaknesses	Overweight, Unreliable
Inspiration	*Albatros D.V (1917)*

Theler Kobra MD

36þ New, 18þ Used

"Last of the Gotha V-Strutters"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	95	14	7	18
Half Fuel	2	95	14	6	18
Empty	-	96	-	6	0

Vital parts

Engine, Radiator, Oil Cooler, MGs, LMGs, Controls, Fuel, Landing Gear Pilot

Dropoff 10, Reliability -3, Overspeed 24, Ideal Alt. 0-29, Fuel 6

Visibility -2, Stability +1, Energy Loss 4, Turn Bleed 2

Toughness 10, Max Strain 22, Escape +2, Crash -1, Stress 1

x2 Forward Accessable MGs, x1 Flexible Forward/Up Accessable Wing LMG
Collimated Gunsight (+1 Attack), High Offset Water Radiator

The Kobra was obsolete by the end of the war, but so much of Gotha's infrastructure was built around them that replacing it entirely wasn't seen as feasible. Theler's outsized influence meant that even though the Empire had finally secured the castor oil, the new Kobra mark entered service.

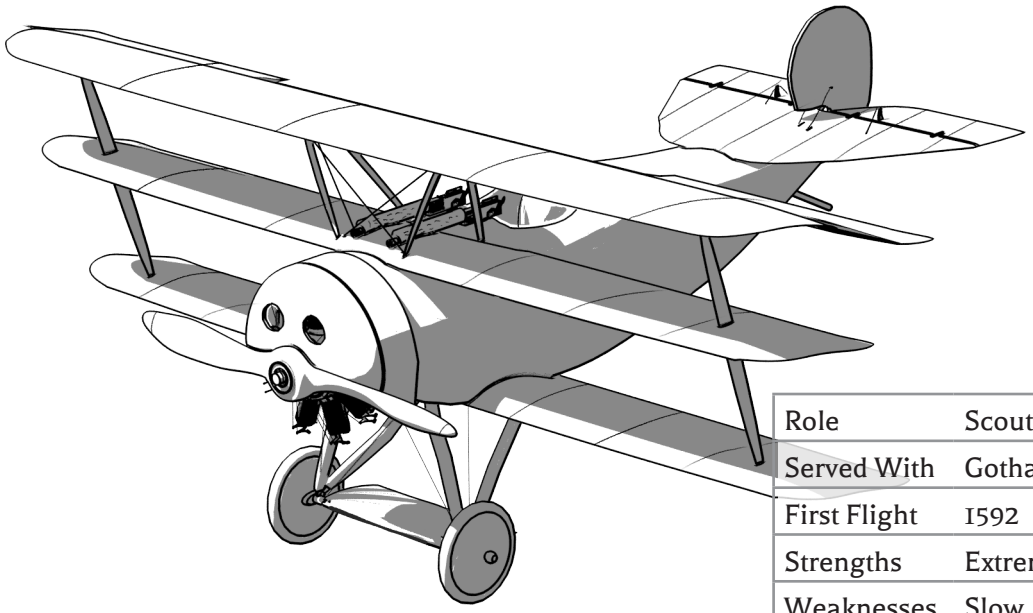
The Kobra MD's overcompressed Bertha F1466 powerplant required manual benzene injections just to start, and had a tendency to blow their cylinders through the valvetrain if you flooded the carburettor. Furthermore, the prototype still suffered wing twisting issues, an embarrassment when most Kreuzer designs were using cantilevers.

It's generally believed that the Theler corporation essentially executed a coup of the Gotha Empire in order to preserve their order.

Common Variations

- MD Prototype: Remove Wire Root.
- Stripped Down: Field mod for drag Reduction. Remove overwing machine gun.
- von Morgen Kobra M(D): Licensed by Fokker. +Streamlining, +Reinforcement, --Mass.
- MDc: Bomber interception variation. Remove MGs, add +2 overwing LMG.

Aircraft Factory Link



Role	Scout
Served With	Gotha Empire
First Flight	1592
Strengths	Extreme Handling
Weaknesses	Slow, unstable
Inspiration	*Fokker DR.1 (1917)*

Kreuzer Spinne M3

32þ New, 16þ Used

"Triplane Terror of the Northern Front"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	108	11	6	15
Half Fuel	2	108	11	5	15
Empty	-	109	-	5	0

Vital parts

Engine, Oil Tank, Guns, Controls, Fuel, Landing Gear
Pilot

Dropoff 9, Reliability -2, Overspeed 20, Ideal Alt. 0-29, Fuel 7
Visibility -2, Stability -4, Energy Loss 4, Turn Bleed 1
Toughness 16, Max Strain 21, Escape +2, Crash -1, Stress 3
x2 Fixed Forward Accessable MGs, Rotary Engine (+1 to Dogfight when turning Right)

Lacking rotary fighters put the Gotha Empire at a distinct disadvantage going into the war in Macchi. The Macchi Singvogels were massively more agile than the Kobra MCs. Eventually, Gotha had to bite the bullet, despite the lack of available castor oil.

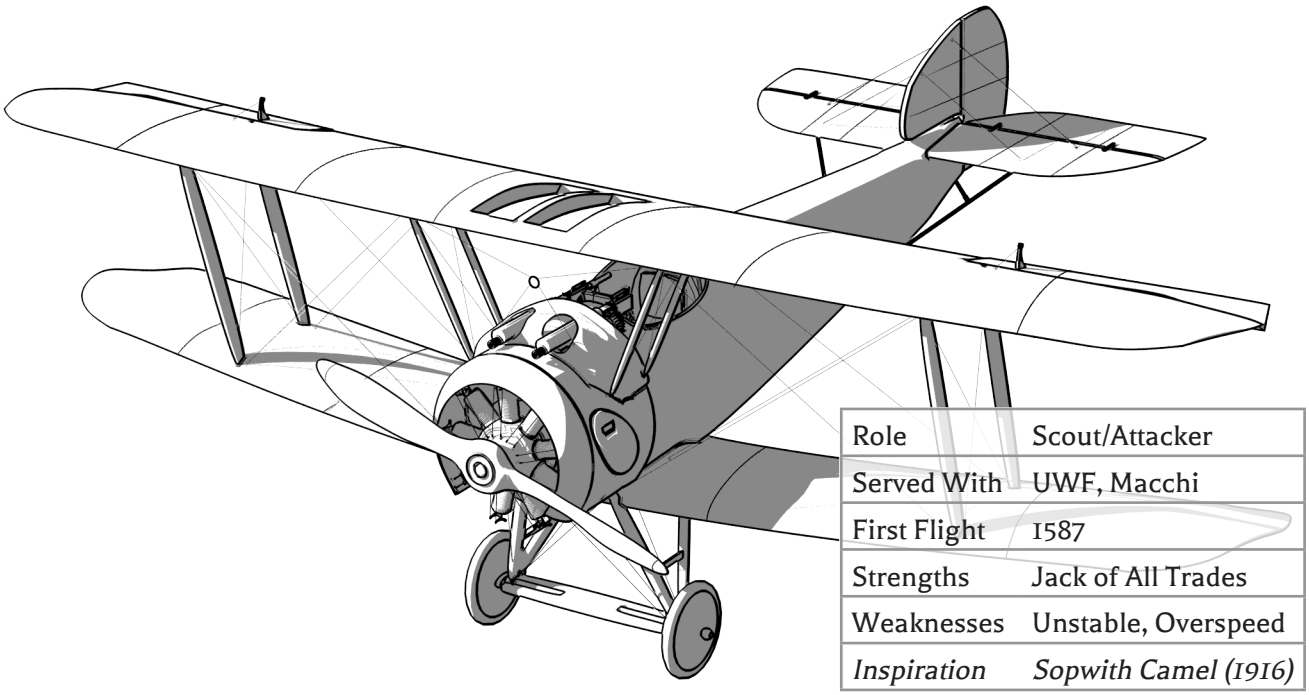
The M3 was limited to a mere 110hp engine, so it was made lean and mean: metal framed, closed cowl, and with triple wings for maximum lift. Its secret weapon was birch cantilever spars instead of tension wires for greatly reduced drag. The M3 served many of Gotha's best aces in large 'Wolf Pack' squadrons in the second half of the war, making them quite sought after by post-war pilots.

Despite their excellent characteristics, the M3's reliance on synthetic lubrication gave them chronic overheating problems in the northern heat, causing an early retirement from service which preserved a great many machines.

Common Variations

- M1: Fragile early version. Remove I-Strut.
- Upengined: Replace engine with Schreiber B.IX looted from downed enemy Singvogels.
- Late Prototype: Add an IAF 2 Supercharger to the engine, replaces MGs with BMGs.
- Parasite: Replace Landing Gear with Zeppelin Hook and Landing Skid.

Aircraft Factory Link



Role	Scout/Attacker
Served With	UWF, Macchi
First Flight	1587
Strengths	Jack of All Trades
Weaknesses	Unstable, Overspeed
Inspiration	*Sopwith Camel (1916)*

Ritter Model F 'Singvogel'

26þ New, 13þ Used

"Defender of the Doomed Republics"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	99	9	8	15
½, Bombs	2	100	9	6	15
Full Fuel	2	100	12	7	16
Half Fuel	2	100	12	5	16
Empty	-	101	-	5	0

Vital parts

Engine, Oil Tank, Guns, Controls, Fuel, Landing Gear, Electrics

Pilot

Dropoff 9, Reliability 0, Overspeed 20, Ideal Alt. 0-29, Fuel 7
Visibility -1, Stability -6, Energy Loss 4, Turn Bleed 1
Toughness 7, Max Strain 23, Escape +2, Crash -1, Stress 2
x2 Fixed Forward Accessible MGs, Collimated Gunsight (+1 Attack), Oxygen Mask Rotary Engine (+1 to Dogfight when turning Right), 2 Mass Bombs

The most famous Ritter design, the Model F Singvogel was designed around high-powered engines that were becoming available as the Macchi Republic began to support the war effort in the UWF. Originally very similar to a Model C, it was upgunned and made more dangerous following a bombing raid on the Ritter factories.

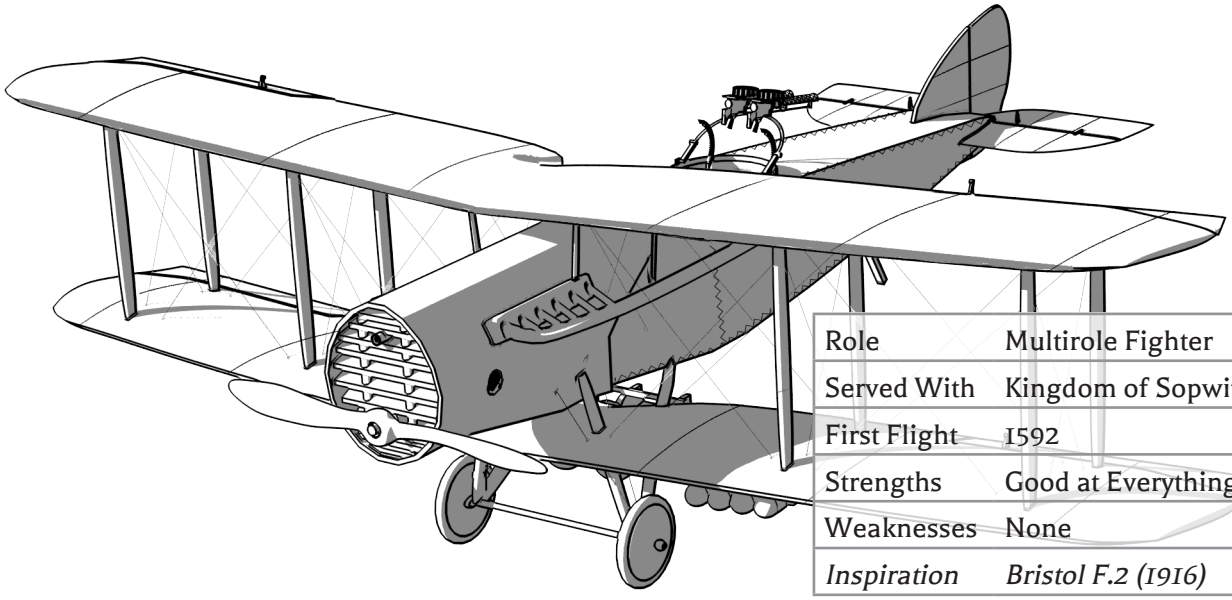
The Model F's effectiveness comes from aggressively clustering all the machine's weight in a small forward area and moving the wings up to match. Thus, the machine can make incredibly aggressive turns, but is so unstable that it will slip into a complex spin with little provocation.

The Model F continued to be produced in Macchi even as the UWF fell. Even now is a common sight in the hands of professional militias who can handle the training time and afford the losses that come with training new Singvogel pilots.

Common Variations

- Model E: Standard tail, remove 1 MG.
- F4: Upengined to W.O.1 150hp.
- Nachtvogel: Replaces MGs with x2 LMG on wing fore/up mounts, removes Wing Cutout.
- Panzervogel: 2/5+ Armour, x1 Mechanical MG.
- SeeVogel: Adds Floats, replaces MGs with BMGs

Aircraft Factory Link



Role	Multirole Fighter
Served With	Kingdom of Sopwith
First Flight	1592
Strengths	Good at Everything
Weaknesses	None
Inspiration	*Bristol F.2 (1916)*

Markgraf Zerstörer B

35þ New, 17þ Used

"Workhorse of the Channel War"

2þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	87	11	8	17
½, Bombs	2	88	11	6	17
Full Fuel	3	89	14	6	17
Half Fuel	3	89	14	5	17
Empty	-	90	-	5	0

Vital parts

Engine, Radiator, Oil Cooler, Pilot
Pilot MG, Gunner LMGs, Controls,
Fuel, Landing Gear
Pilot, Gunner

Dropoff 10, Reliability 0, Overspeed 28, Ideal Alt. 0-29, Fuel 6

Visibility -1/0, Stability +1, Energy Loss 7, Turn Bleed 1

Toughness 10, Max Strain 25, Escape +2/+2, Crash -1, Stress 1/1

Pilot: x1 Fore Accessable MGs, Collimated Gunsight (+1 Attack), Negate 1 Injury on Go Down
Gunner: x2 Rear/Left/Right/Up Access Turret LMGs
Inline Radiator, 8 Mass Bombs

The Markgraf Zerstörer was designed as a unique multirole aircraft, to fit the divergent doctrine of the Königliche Sopwith Fliegerkorps. Neither fully an observer, a bomber, or a fighter, these aircraft were truly flexible, expected to operate without escorts after Attentäter scouts secured the skies.

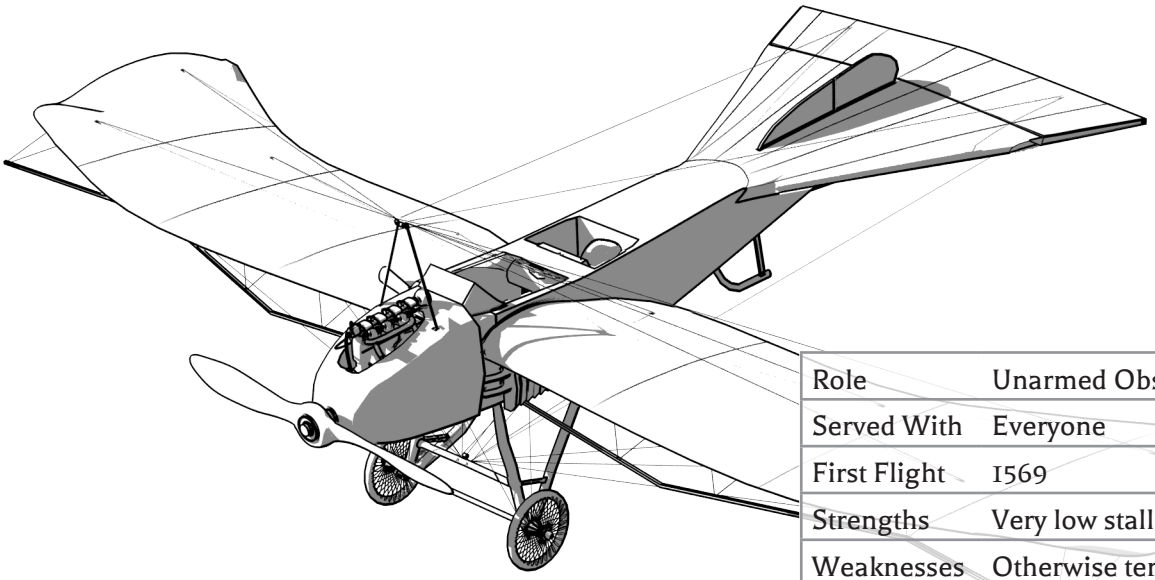
At the core of this remarkable aircraft was a V12 engine, which gave the aircraft speed competitive with single-seaters despite its bulk. It was also given a highly modular armament, capable of carrying a large number of bombs and a variety of weapons for both the pilot and gunner position to fill any roll. It could even mount cameras!

Many nations tried to copy the machine to varying results, and post-War, the Sopwith government sold off much of their reserve stock. This makes the Zerstörer a common sight in the skies.

Common Variations

- C-series: Wollsteinkraft Verteidiger H engine.
- Pilot Weapons: Twin LMGs on upper wing deck.
- Gunner: x2 LMGs, x1 LRC or Punt Gun.
- Gotha Copy: Plywood Monocoque Body, Bertha F4398 Dreifach-Sechs 490hp, High Power prop.
- Free Cities Copy: Duralumin frame, Aluminium skin and wings. Radio transceiver.

Aircraft Factory Link



Role	Unarmed Observer
Served With	Everyone
First Flight	1569
Strengths	Very low stall
Weaknesses	Otherwise terrible
Inspiration	*Etrich Taube (1910)*

Theler Drachen

5þ New, 2þ Used

"First in Service"

0þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	93	10	2	10
Half Fuel	2	93	10	2	10
Empty	-	93	-	2	-

Vital parts

Engine, Radiator, Oil Cooler, Landing Gear, Controls, Fuel Pilot, Passenger

Dropoff 4, Reliability 0, Overspeed 21, Altitude 0-29, Fuel 7
Visibility 0/0, Stability 0, Energy Loss 5, Turn Bleed 1
Toughness 6, Max Strain 32, Escape +2/+2, Crash 0, Stress 1/1
Wing Warping (+1 to Dogfight! when below 15 Speed)

Invented before the start of the Great War, the Theler Drachen was possibly the first plane to be built with a military role in mind. The Gotha Army made their first use of heavier-than-air observers in their border skirmishes in Lohner, using civilian two-seat aircraft to fly over the battlefield. The Theler Drachen was commissioned as a standard aircraft for this role.

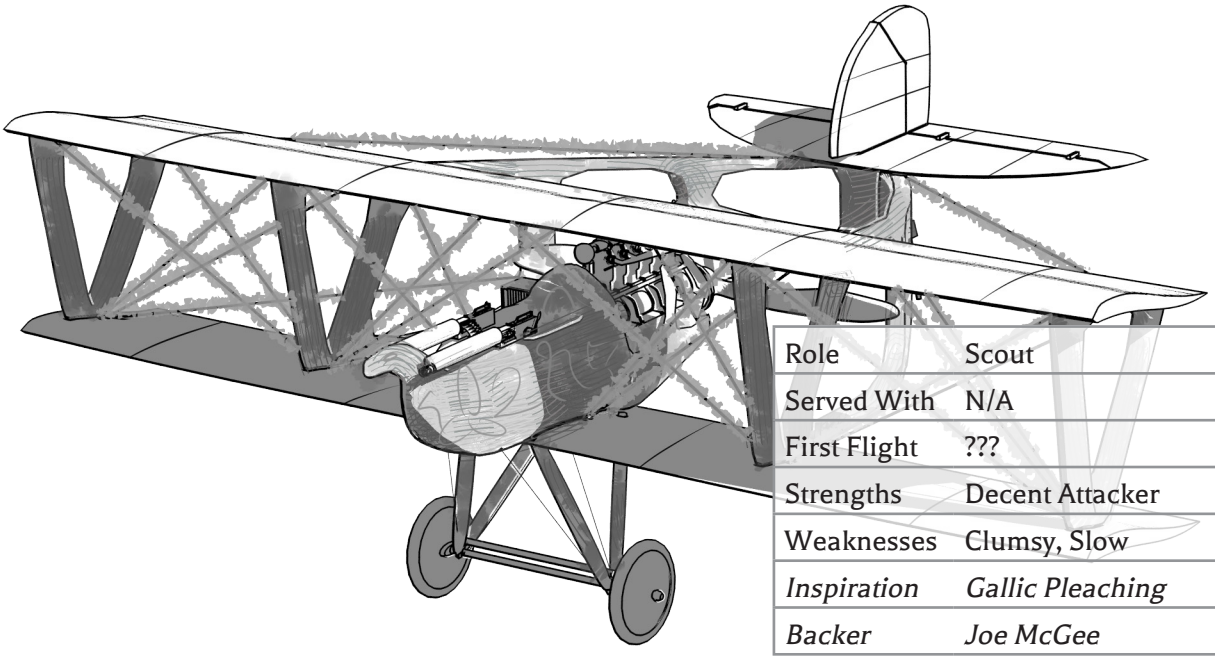
Soon, the Drachen was one of the most common aircraft in the world, purchased by every nation and a great number of civilians. It was relatively easy to fly, easily modified, and cheap. Most pilots have their first training flight in a Drachen.

Though used in the first few years of the war for a variety of roles, they were soon withdrawn from any kind of combat service and redistributed as trainers, where most of them remain.

Common Variations

- Fokker Drachen: Steel tube frame.
- Late Gotha Drachen: Molded wood monocoque.
- Macchi Geisterdrache: Celluloid wings.
- Homemade: Paper wings and skin.
- Civilian Drachen: Naked tail section.
- Combat Drachen: Post-war: remove second seat, add x1 MMG forward with interrupter gear.

Aircraft Factory Link



Role	Scout
Served With	N/A
First Flight	???
Strengths	Decent Attacker
Weaknesses	Clumsy, Slow
Inspiration	*Gallic Pleaching*
Backer	*Joe McGee*

Living Grove (Farman)

27þ New, 13þ Used

"Woven from the Lohner Forests"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	95	9	9	16
Half Fuel	2	95	9	8	16
Empty	-	96	-	8	0

Vital parts

Engine, Radiator, Oil Cooler, Guns, Landing Gear, Controls, Fuel Pilot

Dropoff 9, Reliability -2, Overspeed 24, Altitude 0-29, Fuel 6
Visibility +3, Stability -1, Energy Loss 5, Turn Bleed 2
Toughness 9, Max Strain 20, Escape +2, Crash -1, Stress 1
x2 Fixed Forward Accessible BMGs, Wing Warping (+1 to Dogfight! when below 15 Speed) Flammable, Living Grove (Repairs to Max Strain are free), Inline Radiator

Tree sculpting is among Himmilgard's ancient arts, one of the few that predates flight. The process involves a mixture of careful pruning, guidance structures, and sometimes magic, often over the course of generations, to create elaborate groves that have life beyond the soil.

This art has been used to make airships over the centuries, but some isolated forest communities turned it towards creating aeroplanes during the Great War, to fight off the encroaching imperialist forces. Often, they would use engines, weapons, and components from downed war machines, but the frame would be living wood.

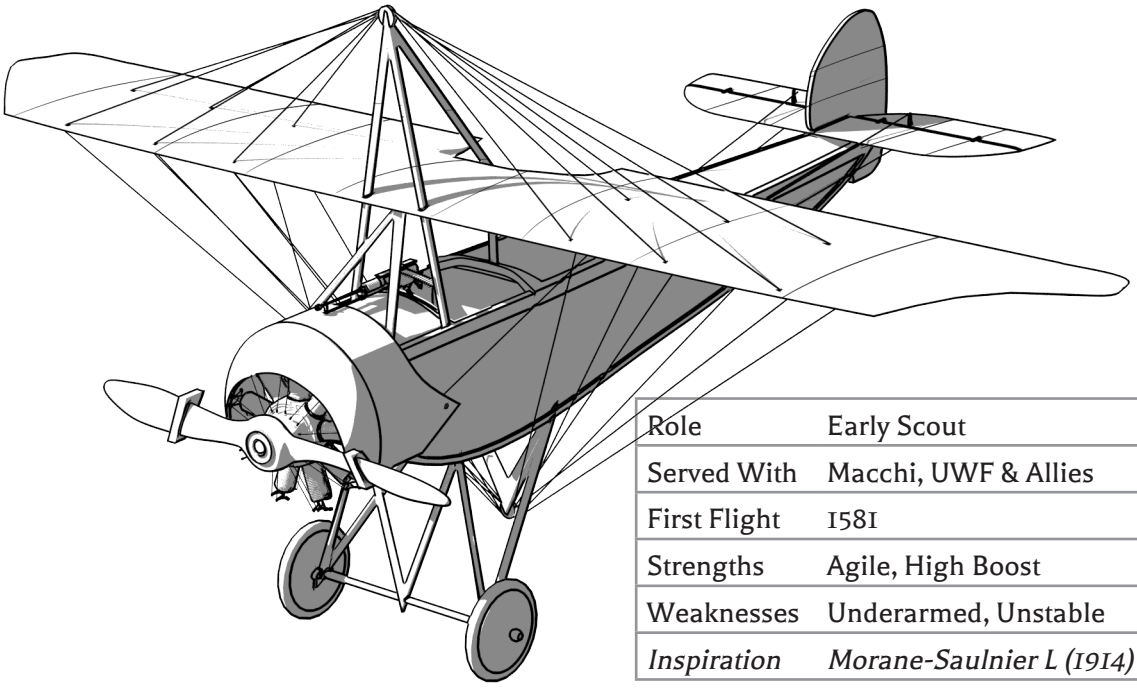
These examples are common in Lohner, likely based on UWF Sperlings and powered by engines taken from downed Gotha Kobras. The patterns carved into them are supposed to grant magical protection and guidance.

These planes need to be tended to carefully, and differently from most. Parking them on damp grass in the sun for at least a few hours every day is highly recommended.

Common Variations

- Salvaged Singvogel: Engine to Schreiber B.IX.
- Salvaged Panzer: Engine to N.M. Arbeiter.

Aircraft Factory Link



Role	Early Scout
Served With	Macchi, UWF & Allies
First Flight	1581
Strengths	Agile, High Boost
Weaknesses	Underarmed, Unstable
Inspiration	*Morane-Saulnier L (1914)*

Rathenau-7k

14þ New, 7þ Used

"The Chariot of the First Aces"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	3	100	14	5	16
Half Fuel	3	100	14	4	16
Empty	-	101	-	3	0

Vital parts

Engine, Oil Tank, Landing Gear, Gun, Controls, Fuel Pilot

Dropoff 9, Reliability 0, Overspeed 20, Altitude 0-29, Fuel 7
Visibility 0, Stability -5, Energy Loss 4, Turn Bleed 1
Toughness 7, Max Strain 31, Escape +2, Crash 0, Stress 3
x1 Fixed Forward Accessible LMG, Deflector Wedges (Take 1 Wear on a 5 or less on the first Crit dice) Wing Warping (+1 to Dogfight! when below 15 Speed), Rotary (+1 to Dogfight when turning Right)

Though there are many historians who dispute it, the Rathenau-7a is the first combat scout, as defined as a single-seat plane with fixed forward weapons designed to attack other aircraft. It achieved this by mounting deflector plates on the propeller of an unarmed Rathenau-7 observer. It was soon outclassed by Gotha's Arntwerks c.10.

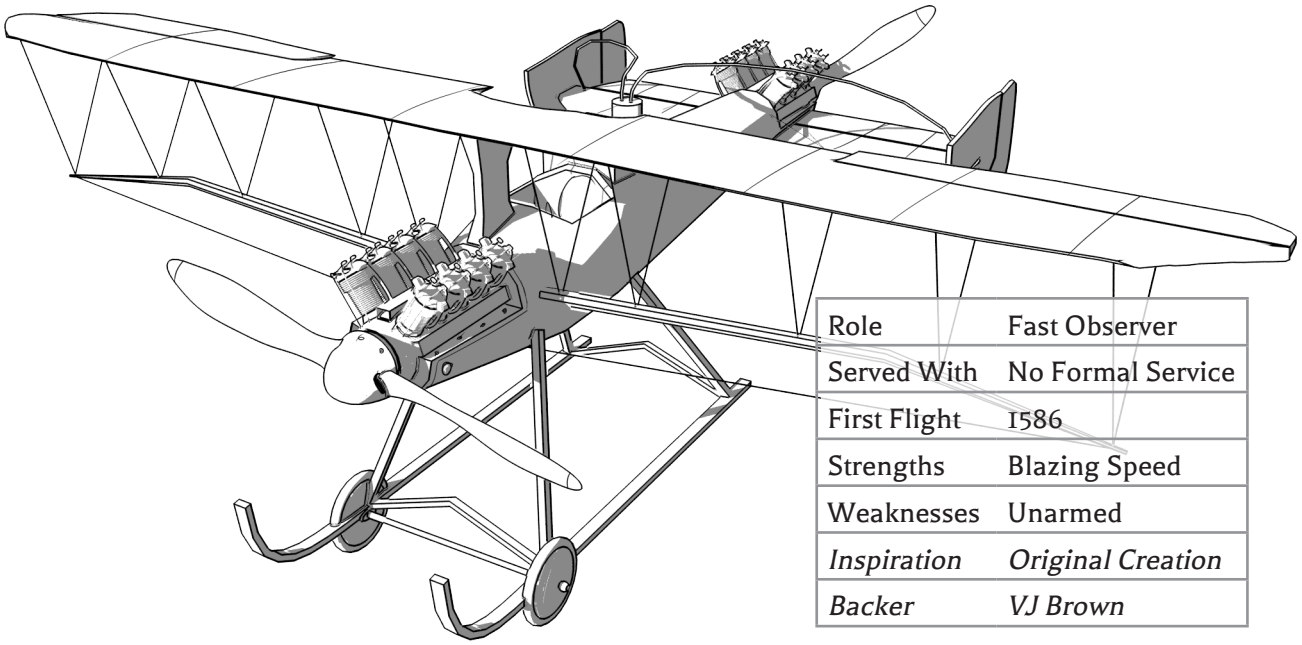
The design of the engine mount, using a looped wire cage, made retrofitting an interrupter gear impractical. Before large scale revisions could correct this issue, the much better Rathanu-9 came into operation, using overwing guns and later interrupter gears themselves.

The largest operators of the Rathenau-7 were the various principalities of Lohner fighting alongside the UWF, and many of them remain in the hands of militias, usually upgraded to Schreiber B.IX engines from downed Singvogels.

Common Variations

- 7a: Rhona Motorbau Z11 engine.
- 7b: 7a with flap ailerons instead of warping.
- 7c: 7b with an interrupter gear and MMG.
- EH.I: Fokker 'Einhochdecker' copy, refitted w/ Scholz Luchs X, interrupter, & MMG.

Aircraft Factory Link



Role	Fast Observer
Served With	No Formal Service
First Flight	1586
Strengths	Blazing Speed
Weaknesses	Unarmed
Inspiration	*Original Creation*
Backer	*VJ Brown*

Braun Model VJ

12þ New, 6þ Used

"Phantom Spies of the Lost Jagdstaffels"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	75	13	10	21
Half Fuel	2	76	13	8	21
Empty	-	77	-	7	-

Vital parts

x2 Engines, x2 Oil Pans, Fuel, Controls, Electrics, Landing Gear Pilot

Dropoff 6, Reliability +2/+2, Overspeed 23, Altitude 0-29, Fuel 12
Visibility +2/+2, Stability +1, Energy Loss 3, Turn Bleed 3
Toughness 6, Max Strain 20, Escape +2/+2, Crash -1/-1, Stress 1/1
Radio Transciever, 2 Charge Generation, 5 Charge Battery

In the years leading up to the Great War, and in countries that were not belligerents at various times, there was a roaring trade in 'kit planes', aircraft designed to be assembled by the purchaser. Oftentimes, a kit would consist of little more than the engine, steel parts, and instructions.

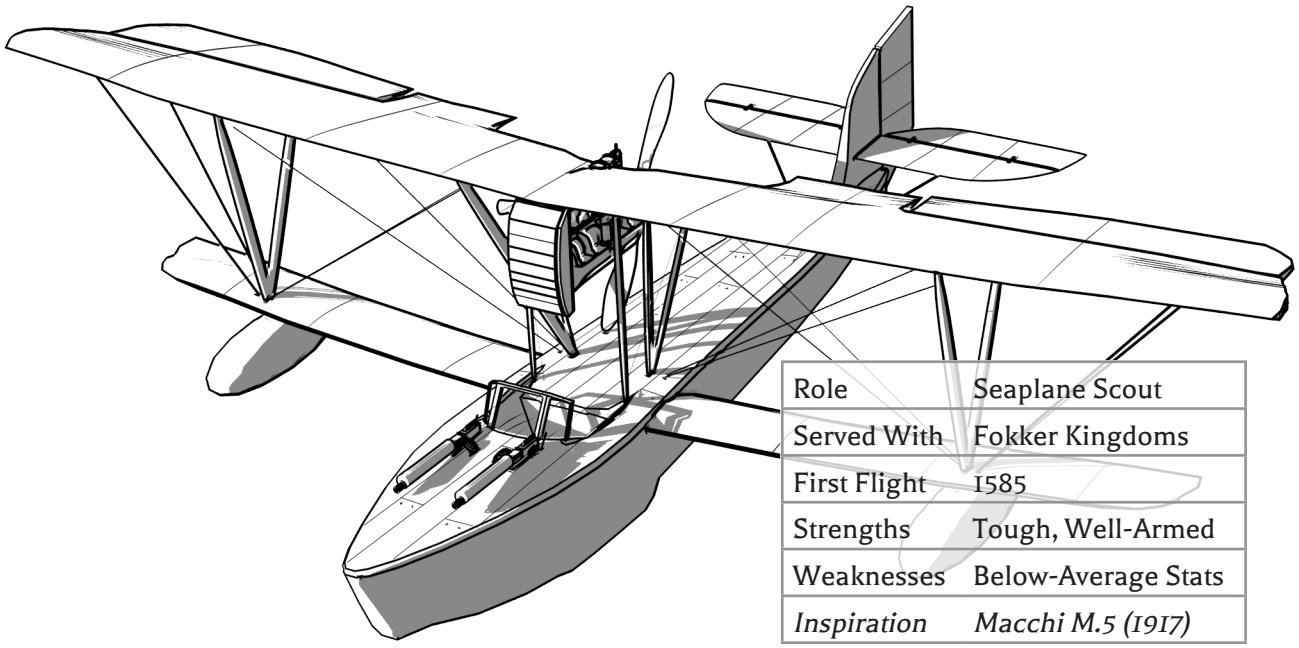
Powered by a pair of small, air-cooled V8 engines, and unusually quite while running, the Braun Model VJ was a very popular kit plane known for its high speed and simple assembly. Military units began to purchase them as irregular observers, often out of pocket by commanders, owing to the fact they would outrun any early-war aircraft.

The most notable feature of the Model VJ, other than its blistering speed and lack of ailerons, is the ability to carry a lightweight radio, controlled by a passenger. This feature was rare originally, but became standard as the military used it more frequently.

Common Variations

- Desert: Convert engines to liquid-cooled, add twin inline panel radiators.
- Racer: Delete passenger & radio, add long tail.
- Spy: Replace radio with observation camera.

Aircraft Factory Link



Role	Seaplane Scout
Served With	Fokker Kingdoms
First Flight	1585
Strengths	Tough, Well-Armed
Weaknesses	Below-Average Stats
Inspiration	*Macchi M.5 (1917)*

König-Werke S1

28þ New, 14þ Used

"Cursed Gifts of the Fokker Kingdoms"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	93	10	7	15
Half Fuel	2	94	10	6	15
Empty	-	95	10	5	0

Vital parts

Engine, Radiator, Oil Cooler, Controls, Fuel, Boat Hull Pilot

Dropoff 6, Reliability -1, Overspeed 25, Ideal Alt. 0-29, Fuel 13
Visibility -1, Stability -1, Energy Loss 5, Turn Bleed 2
Toughness 9, Max Strain 31, Escape +2, Crash -1, Stress 1
x2 Fixed Forward Accessible MGs Hardened Inline Water Radiator

The Fokker Kingdoms, ruling as it did over the Vosin Valley and Dornier Delta, was home to the largest population of Fischervolk in the pre-War world. Before the war, this rule was distant, but the pressures of industrial conflict soon changed that.

Though the Dark Sea itself is dangerous, fischers have a long tradition of creating artificial lagoons and tide pools for swimming and sea planes. Thus, the KW-S1 was produced specifically for Fokker's campaigns, with the idea that a number could be sent as 'gifts' to fischer villages as trainers, before conscripting these new pilots to operate off the many lakes of the Dorand Lowlands.

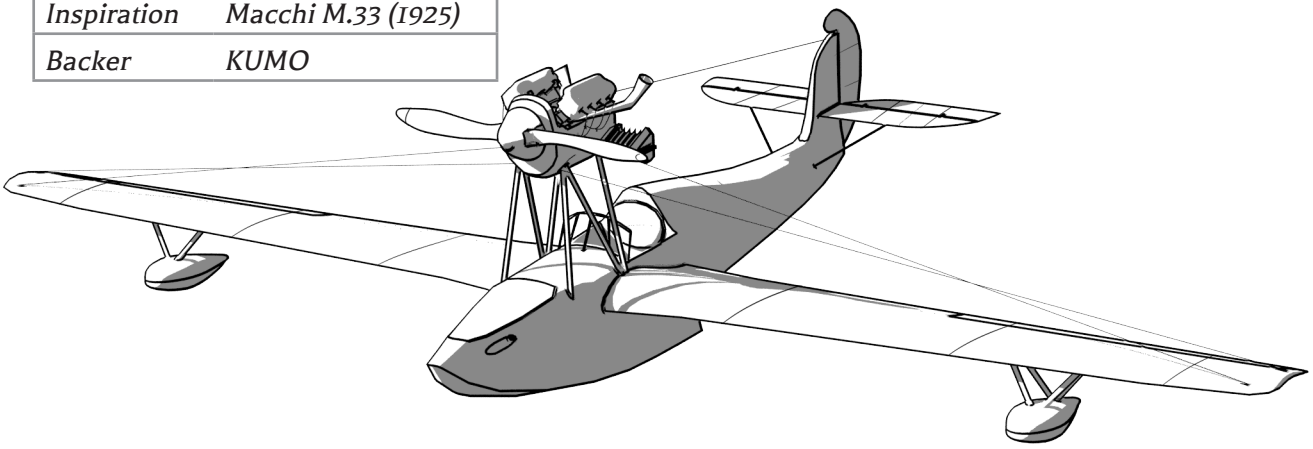
Produced in absolutely massive numbers, the S1 remained in service past its obsolescence: ethnic fischer units were often considered second rate, with later S-series planes passed up in favour of less expensive modifications to the S1. There are towns in former Fokker territories where the S1 is still being manufactured, using whatever engines and materials are avaliable.

Common Variations

- S1-1: Guns moved inside the hull and covered.
- S1-5: Engine to Fleischmann F10 250hp.
- ST: S1 with a co-pilot position.

Aircraft Factory Link

Role	Seaplane Scout
Served With	Fokker Kingdoms
First Flight	1597
Strengths	High Speed
Weaknesses	Underarmed
Inspiration	*Macchi M.33 (1925)*
Backer	*KUMO*



König-Werke S4

47þ New, 23þ Used

"The Rotes Schwein's Widowmaker"

2þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	87	II	II	20
Half Fuel	2	88	II	10	20
Empty	-	89	-	9	0

Vital parts

Engine, Radiator, Oil Cooler, Controls, Fuel, Boat Hull Pilot, Passenger

Dropoff 8, Reliability -2, Overspeed 34, Altitude 0-29, Fuel 9
Visibility -3/-, Stability +3, Energy Loss 4, Turn Bleed 2
Toughness 24, Max Strain 34, Escape 0, Crash -1, Stress 1/0
Fixed Forward Accessible MGs, Telescopic Gunsight (+2 to Attack when Drawing a Bead) Sealed Cockpit (Passenger cannot see out), Inline Water Radiator

Though frequently sidelined, fischervolk pilots began to have undeniable impact on the Fokker Empire's war effort, especially once fighting in Macchi reached the Caproni islands. The S4 was finally approved to equip these units, and by the end of the war frontline fischer units and a handful of other seaplane squadrons were using it.

The S4 was in every way an improvement over previous models. The Fokker Empire's mastery of the cantilever spar was put to good use, allowing the plane to use a single long, aerodynamic wing for maximum lift. It was given a powerful V6 engine, twin guns, and all-plywood skin.

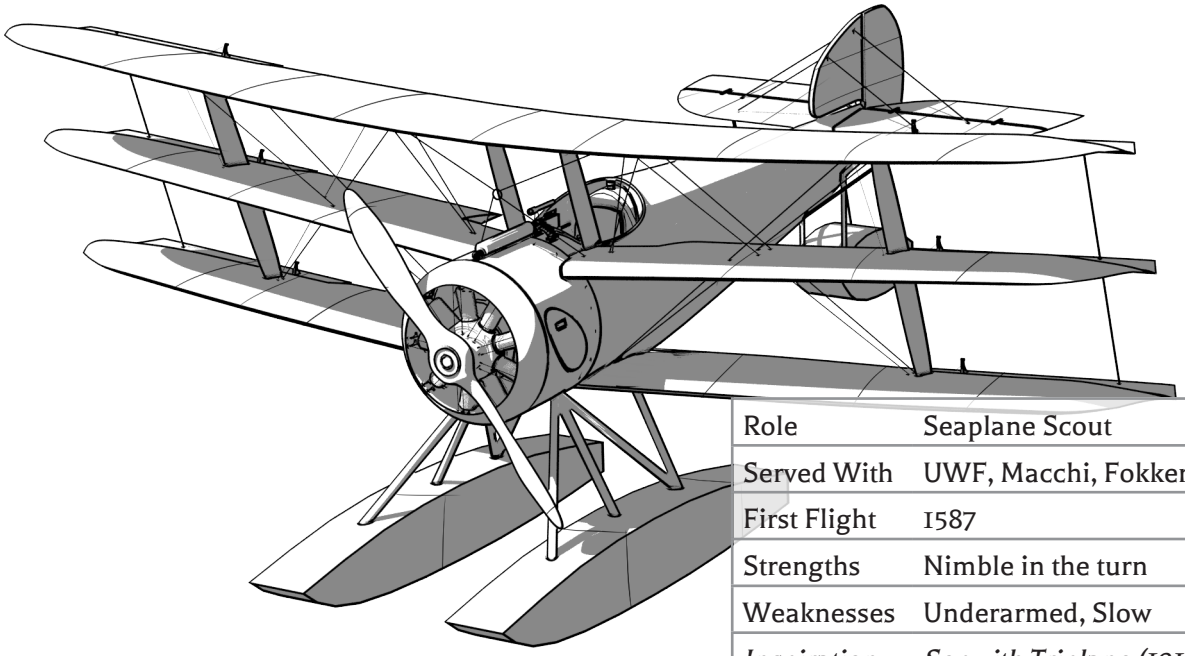
However, all was not well with the aircraft. It was heavier than originally advertised, so after Fokker's best seaplane ace removed one of his machine guns from the nose of his bright red plane, most new pilots followed suit, and soon they were produced that way in factories.

Of small note is the aircraft's weapons are located in an open space that modern Circuses often use as cargo space or even a passenger spot.

Common Variations

- S4-1: Replace 2nd crew with Tiny cargo and MG.

Aircraft Factory Link



Role	Seaplane Scout
Served With	UWF, Macchi, Fokker
First Flight	1587
Strengths	Nimble in the turn
Weaknesses	Underarmed, Slow
Inspiration	*Sopwith Triplane (1916)*

Ritter Model D 'SeePfau'

19þ New, 9þ Used

"Doom of the Caproni Push"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	102	11	7	16
Half Fuel	2	102	11	6	16
Empty	-	103	-	5	0

Vital parts

Engine, Oil Tank, Floats, Controls, Fuel, Guns
Pilot

Dropoff 9, Reliability 0, Overspeed 20, Altitude 0-29, Fuel 7

Visibility -1, Stability -2, Energy Loss 4, Turn Bleed 1

Toughness 5, Max Strain 28, Escape +2, Crash -1, Stress 2

Fixed Forward Accessible MG
Rotary Engine (+1 to Dogfight when turning Right)

Though the Ritter Model D Pfau began life as a conventional land-based triplane, it did not stay that way for long. Originally, it was produced by Ritter for the United Western Federation as an iteration on the Model C, hopefully giving the flagging UWF Luftwaffe an edge against the larger Gotha Luftstreitkräfte. It was soon overshadowed by the more successful Model F and relegated to supplemental roles until the fall of the UFW.

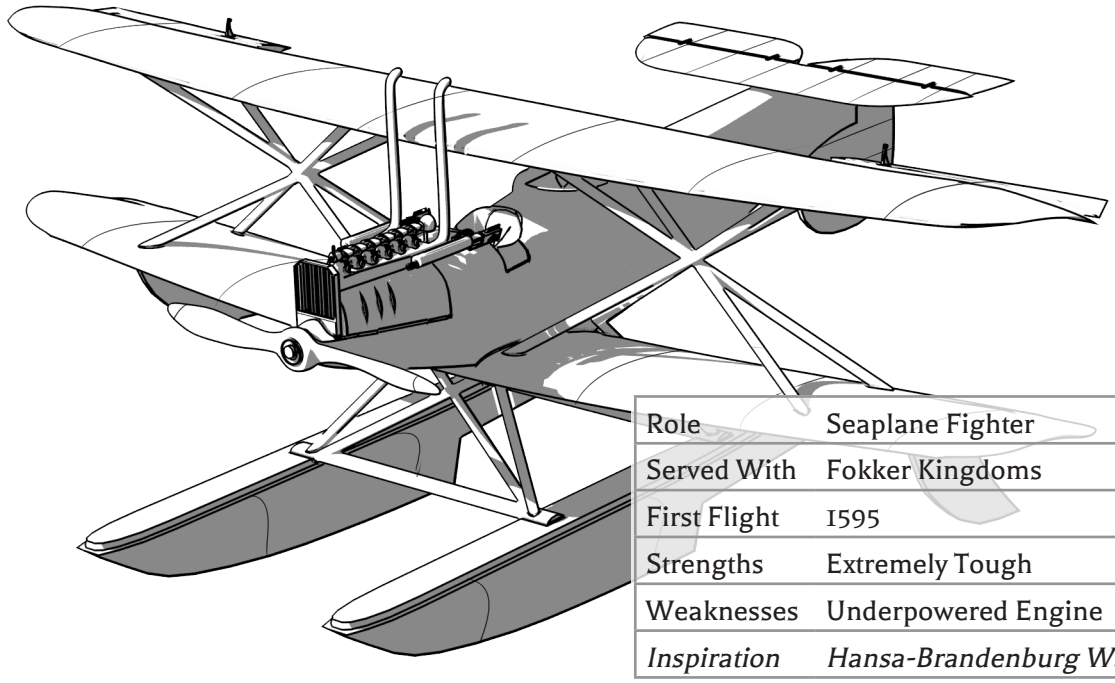
However, when the Ritter factories evacuated to Macchi, the Republic found a new use for the Model D. Its stability made it a natural fit for their island garrisons, and the SeePfau was born.

In addition to still being common there, thousands were seized as trophies by the Fokker Kingdoms after the Macchi Republic fragmented into uprisings, guerilla armies, and banditry. The survivors were sent to fischer villages to be used for training, and many remain there to this day.

Common Variations

- Pfau: Floats to landing gear.
- Upgunned: Second MMG.
- KW S-5: Fokker knockoff. Steel frame & struts.
- Night Fighter: Replace MMGs with twin wing LMGs.

Aircraft Factory Link



Role	Seaplane Fighter
Served With	Fokker Kingdoms
First Flight	1595
Strengths	Extremely Tough
Weaknesses	Underpowered Engine
Inspiration	*Hansa-Brandenburg W.11/W.12*

Teicher Möwe 13S-J

43þ New, 21þ Used

"Fokker's Forgotten Fleet-Killers"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	1	89	6	8	13
½, Bombs	1	91	6	6	13
Full Fuel	1	91	8	7	14
Half Fuel	1	92	8	6	14
Empty	-	93	-	5	0

Vital parts

Engine, Radiator, Oil Cooler, Pilot Guns, Gunner LMGs, Controls, Fuel, Floats
Pilot, Co-Pilot

Dropoff 8, Reliability 0, Overspeed 24, Altitude 0-29, Fuel 13

Visibility -1/-1, Stability +1, Energy Loss 6, Turn Bleed 1

Toughness 31, Max Strain 38, Escape +2/+2, Crash -1, Stress 0/0

x2 Fixed Forward Accessible MG
Inline Radiator, Co-pilot Controls, 10 Mass Bombs

Observation was considered a niche use for seaplanes during early Fokker campaigns. They were mostly seen as a means of maintaining scout coverage during the yearly flooding of the Doran Lowlands. Little thought was paid to the performance of two-seaters.

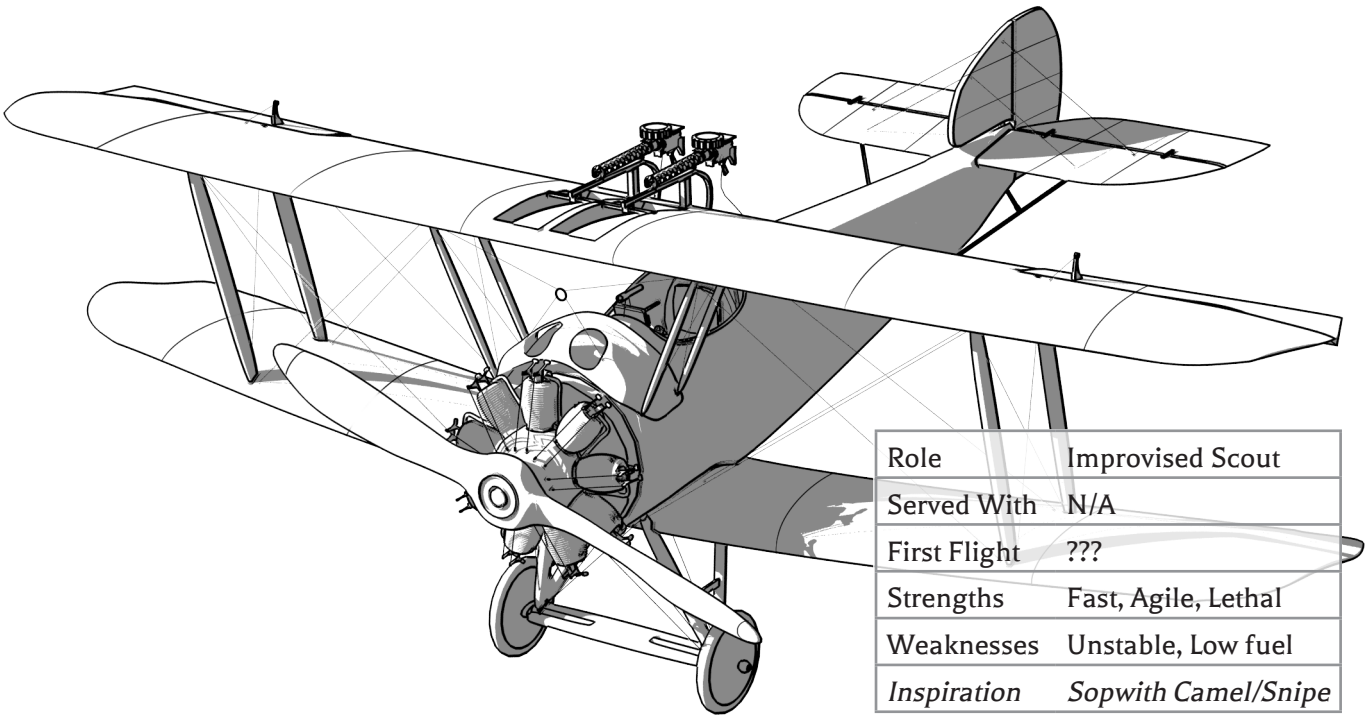
This changed as the war went north, especially once confronted with Macchi's bizarre 'Seeheer' and its carriers, gunships, and u-boats. The Teicher Möwe 13S was designed in response with high endurance, forward and rear guns, robust steel construction, and a bombload. In theory, it could attack fleets far out to sea.

A good theory, but unfortunately, the engine it was supposed to have was earmarked for the von Morgen Vampyr. The Möwe was left underpowered and overweight, rotting as trainers in fischer villages. But it has potential...

Common Variations

- Wartime: Remove copilot controls, Rear/Up/Left/Right LMG Turret.
- Intended Powerplant: Replace engine with the Schrankhut RD.300V, add turret.
- 13L: Replace floats with wheels.
- 14S: Remove co-pilot & bombs. Long tail.

Aircraft Factory Link



Role	Improvised Scout
Served With	N/A
First Flight	???
Strengths	Fast, Agile, Lethal
Weaknesses	Unstable, Low fuel
Inspiration	*Sopwith Camel/Snipe*

Ritter 'Ersatz S'

26þ New, 13þ Used

"Chopped Up & Welded Together"

2þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	3	100	14	8	19
Half Fuel	3	100	14	7	19
Empty	-	101	14	6	0

Vital parts

Engine, Oil Tank, Landing Gear, Guns, Controls, Fuel Pilot

Dropoff 12, Reliability -3, Overspeed 21, Altitude 0-29, Fuel 4
Visibility +1, Stability -7, Energy Loss 5, Turn Bleed 2
Toughness 10, Max Strain 22, Escape +3, Crash -1, Stress 3
x2 Flexible Forward/Up Accessable Wing LMGs Rotary Engine (+1 to Dogfight when turning Right)

Rotary engines require castor oil for lubrication, and the Macchi Republic produced more than 90% of the castor oil in Himmilgard. As relations with Gotha and Fokker worsened, this supply was cut off, forcing Macchi's enemies to turn to liquid-cooled engines and synthetic lubrication.

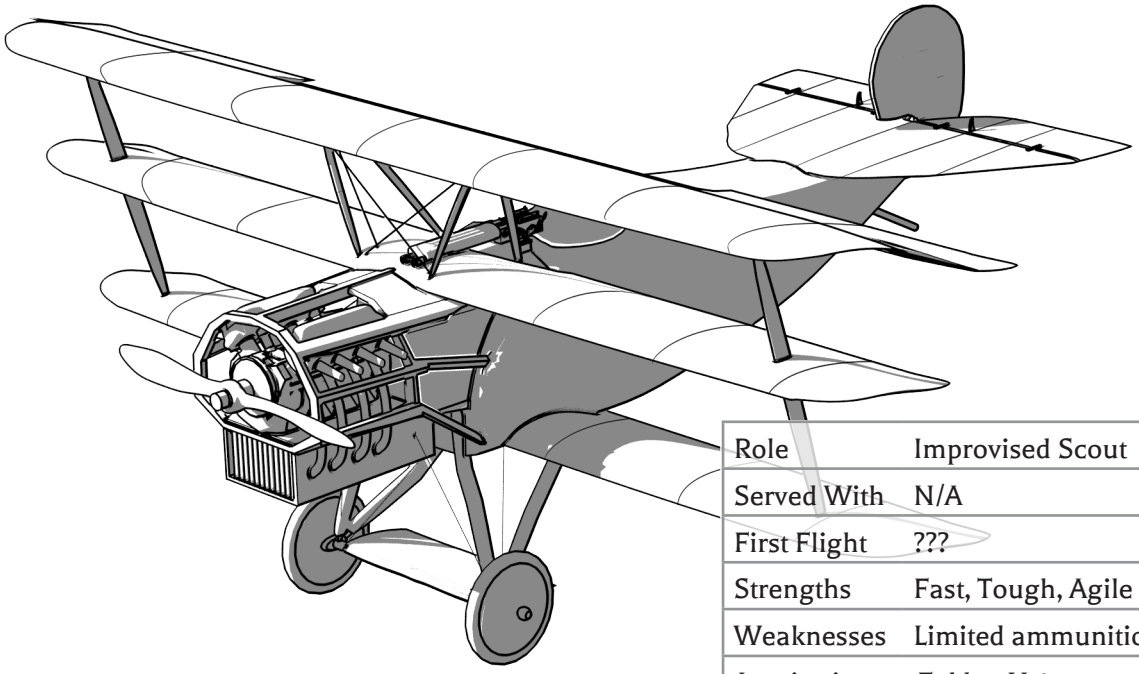
When Macchi was defeated, Gotha seized huge numbers of Ritter Model Fs, stripping out the engines to put them in their Kreuzer triplanes. They also seized the blueprints for the 230hp W.O.3 engine and were in the process of producing them for their next-generation fighters when the end of the world came.

If you were trapped in an industrial city in Gotha and you needed to make a plane to escape, you could do worse than attach one of those half-finished rotary engines to a cannibalized Model F airframe. There would be drawbacks, though: the engine is too large to fit the cowl, it'd need a heavy metal mounting frame, and would block the barrels of the machine-guns. But it could be done.

Known Variations

- Kreuzer Uncontrollable Spinne: Same principle, but with the body a Kreuzer Spinne.
- Turbo Sparrow: Same principle, but with the body of a Ritter Model C and a W.O.1.

Aircraft Factory Link



Role	Improvised Scout
Served With	N/A
First Flight	???
Strengths	Fast, Tough, Agile
Weaknesses	Limited ammunition
Inspiration	*Fokker V.6*

Kreuzer Spinne V8 Conversion

31þ New, 15þ Used

"Foolproof Escape Plan"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	3	104	13	8	18
Half Fuel	3	104	13	7	18
Empty	-	105	-	6	0

Vital parts

Engine, Radiator, Oil Cooler, Guns, Controls, Fuel, Landing Gear Pilot

Dropoff 10, Reliability 0, Overspeed 28, Altitude 0-29, Fuel 7
Visibility -2, Stability +1, Energy Loss 4, Turn Bleed 2
Toughness 17, Max Strain 20, Escape +2, Crash -1, Stress 1
Fixed Forward Accessible Gast Principle BMG Low Radiator, Roll Bar: Negates 1 Injury from Go Down

Castor oil has a shelf life: it only lasts a year. While fuel and synthetic oils in Himmilgard have stablizing agents which have allowed stores of them to survive for decades, once castor oil goes off, it's no longer useable, which can be a problem if you need to use one of these planes to escape a bombed out city.

The Kreuzer Spinne was a solid design with an underpowered engine, so after the war in Macchi many were recalled to cities have their engines replaced, where they remain. If lack of oil prevents reinstalling their original engines, one can improvise a conversion to liquid-cooled engines.

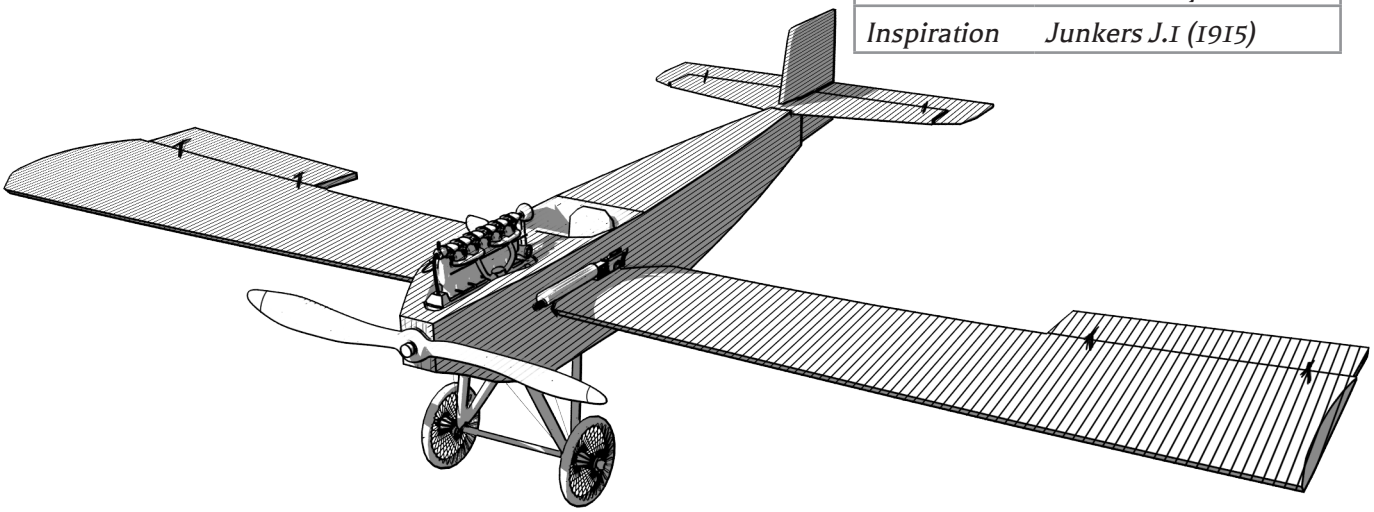
A few of these conversions, most mounting V8 engines taken from downed KW Alder-Ns, are seen every year, often armed with prototype gast guns taken from the conversion factories. Their performance is so impressive that some workshops have begun converting intact aircraft.

Common Variations

- Spider Six: Uses the Bertha F1466 Uber from the Kobra MD.
- Original Guns: Uses the original twin MMGs.

Aircraft Factory Link

Role	Prototype
Served With	None
First Flight	1589
Strengths	Thick, Heavy Metal
Weaknesses	Thick, Heavy Metal
Inspiration	*Junkers J.1 (1915)*



Hugo's Ganzmetall Wunderflugzeug!

43þ New, 21þ Used

"The All-Metal Wonderplane"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	1	91	8	7	14
Half Fuel	1	91	8	6	14
Empty	-	92	-	6	-

Vital parts

Engine, Radiator, Oil Cooler, Landing Gear, Gun, Controls, Fuel Pilot

Dropoff 8, Reliability 0, Overspeed 24, Altitude 0-29, Fuel 11

Visibility 0, Stability -2, Energy Loss 4, Turn Bleed 2

Toughness 51, Max Strain 49, Escape +2, Crash 0, Stress 1

Fixed Forward Accessible MG

Low Radiator, Armour 2/8+

Exactly who Hugo Bennhold was is a mystery. An aircraft designer prolific in the last years of the war, his nationality, education, and personal history are all unknown. It is speculated that he was a Junker in some small western principality, but even that is uncertain. What is known is that the man was absolutely obsessed with steel aircraft.

The All-Metal Wonderplane was the first of Hugo's designs, shipped by sky-line or zeppelin carriers to a number of large cities in a sort of advertisement schemes. The machine was sluggish, slow, and impractical, though technically impressive, and so they were usually left to moulder or put on display.

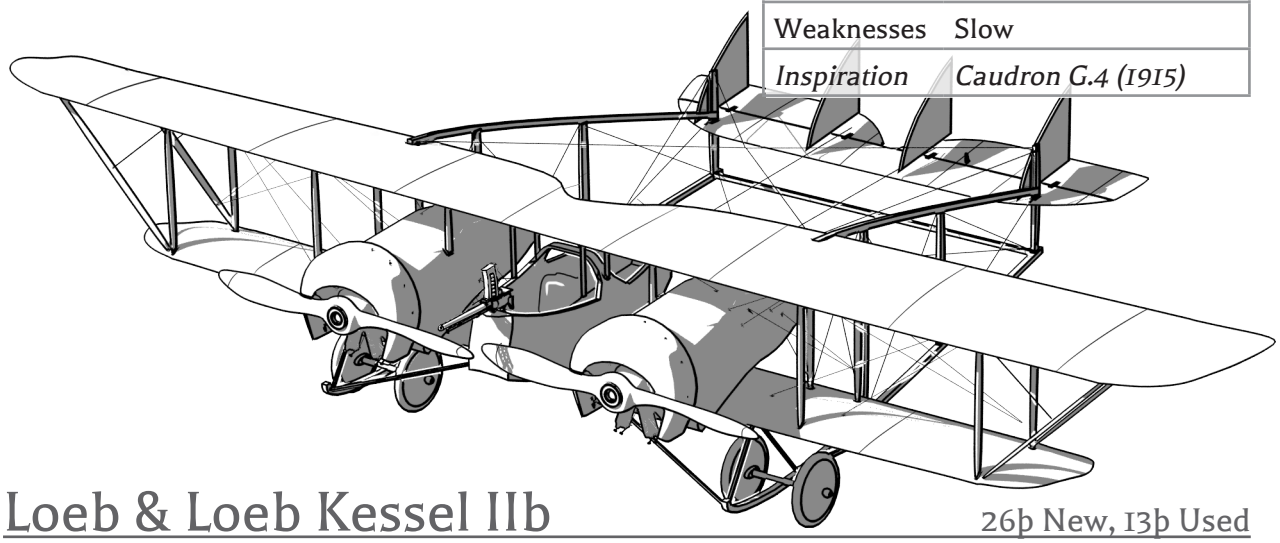
That said, many engineers took note of the wings, which stayed on without external means of support. These cantilever wings were soon copied by a variety of designers, though none of them were as robust as the Bennhold designs.

Common Variations

- Combat Ready: Upgrade to Bertha F1466 engine.
- Two-Seater: Add second position with x1 rear/upward facing MMG, change tail to Stubby.
- Flying Tank: Narrow canopy, sealed engine cowl, and 2 more points of Armour 2.
- Folded 10,000 times: Add Wing Blades.

Aircraft Factory Link

Role	Fighter-Bomber
Served With	ELPR, UFW, Gotha
First Flight	1582
Strengths	Surprisingly Agile
Weaknesses	Slow
Inspiration	*Caudron G.4 (1915)*



Loeb & Loeb Kessel IIb

26þ New, 13þ Used

"The Ghosts of Fallen Nations"

2þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	92	8	7	13
½, Bombs	2	93	8	5	13
Full Fuel	2	93	9	6	13
Half Fuel	2	94	9	5	13
Empty	-	95	-	4	-

Vital parts

x2 Engine, x2 Oil Pans, Gun, Controls, Fuel, Landing Gear

Pilot, Gunner

Dropoff 10, Reliability -1/-1, Overspeed 25, Altitude 0-29, Fuel 7
Visibility +2/+2, Stability 0, Energy Loss 10, Turn Bleed 1
Toughness 11, Max Strain 35, Escape +2/+2, Crash -1/, Stress 1/1
Forward/Up Access LRC Turret, 5 Mass Bombs Wing Warping (+1 to Dogfight! when below 15 Speed)

The L&L Kessel I served as a bomber and observer for the East Lohner People's Republic, and, after the annexation of the ELPR by the UWF, Salomon and Kurt Loeb were conscripted and encouraged to produce a successor.

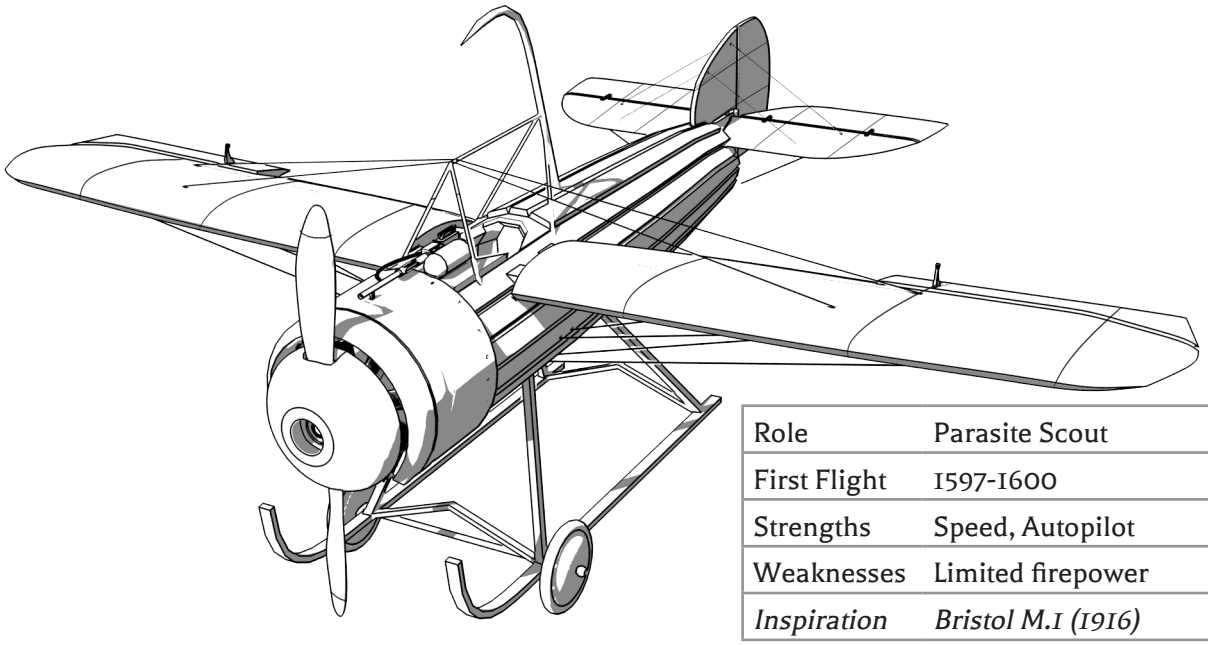
The Kessel II was one of the first successful twin engined aircraft in the early years of the war, serving in the same roles, but by 1583 their speed and power advantages had been entirely surpassed and most were divested to local militias or for use as a civil utility aircraft, as its forward seat could be used by police watchmen, cartographers, touring celebrities, and so forth.

After the end the wide distribution of these aircraft and their ability to use nearly any powerplant made them popular as multiroles, especially since the unique tail structure and warping wings make them remarkably manoeuvrable for a bomber. Many were left in the dead cities, though the Scholz Luchs X 10-cylinder radial engines on the Kessel IIb are remarkably easy to restore to working order for anyone who might want one...

Common Variations

- Kessel IIa: Rhona Motorbau Z12 engines.
- Kessel IIc: Bertha F116 & low radiators.
- Funkvogel: No bombs, radio

Aircraft Factory Link



Role	Parasite Scout
First Flight	1597-1600
Strengths	Speed, Autopilot
Weaknesses	Limited firepower
Inspiration	*Bristol M.1 (1916)*

Ajeet Interceptor

24þ New, 12þ Used

"Guardian of the Convoy"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	96	13	7	18
Half Fuel	2	96	13	6	18
Empty	-	97	-	5	-

Vital parts

Engine, Oil Tank, Landing Gear, Controls, Fuel, Gun Pilot

Dropoff 7, Reliability -2, Overspeed 20, Altitude 0-29, Fuel 7
Visibility +1, Stability -3, Energy Loss 3, Turn Bleed 2
Toughness 7, Max Strain 35, Escape +2, Crash 0, Stress 2
Fixed Forward Accessible Pneumatic MG Rotary Engine (+1 to Dogfight when turning Right), Programmable Autopilot, Zeppelin Hook

The Skyborn have their own cottage industry of aircraft production, using engines bought or salvaged from ground production to build unique craft to their own needs. Skyborn aircraft are all unique and hand-crafted, but they are built to recognizable patterns, their blueprints traded like anything else between convoys.

The Ajeet is the modern standard for Skyborn scouts: its wooden-plank construction makes use of tested shipbuilding techniques, the monowing makes using docking hooks easy, and the rotary engine keeps weight down. A clockwork autopilot allows the pilot to use their wingsuit if needed.

The Ajeet's pneumatic gun is a holdover from the Imperial age, when most nations prevented the Skyborn from owning firearms. These air cannons would slip right by inspectors, often disguised as automatic starters for engines.

Common Variations

No two Skyborn aircraft are exactly the same, being the product of cottage industry. Wing size, cowl configuration, and engine are all variable.

Copies of the Ajeet with canvas skin, no autopilot, and standard MMGs have been avaliable for sale for the last few years as the Markgraf Korsar.

Aircraft Factory Link

Role	Parasite Scout
First Flight	1582-83
Strengths	Rockets!
Weaknesses	Inferior performance
Inspiration	*Caproni Ca.20 (1914)*

Shamsher Interceptor

22þ New, 11þ Used

"Trusted Old Friend"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	1	95	6	10	15
½, Bombs	2	96	6	7	15
Full Fuel	2	97	11	7	16
Half Fuel	2	97	11	6	16
Empty	-	98	-	5	-

Vital parts

Engine, Oil Tank, Gun, Controls, Fuel, Landing Gear

Pilot

Dropoff 6, Reliability -4, Overspeed 20, Altitude 0-29, Fuel 7
Visibility 0, Stability -2, Energy Loss 3, Turn Bleed 2
Toughness 7, Max Strain 35, Escape +2, Crash +2, Stress 0
Fixed Forward Accessible Wing Pneumatic MG, 6 Mass Rockets Rotary Engine (+1 to Dogfight when turning Right), Wing Warping (+1 to Dogfight when <15 Speed) Programmable Autopilot, Zeppelin Hook

In the lead-up to the Great War, trading anything but trinkets and garbage with Skyborn convoys was outright illegal In much of the world. This found many Skyborn convoys as their lowest point, making procuring aircraft quite nearly impossible.

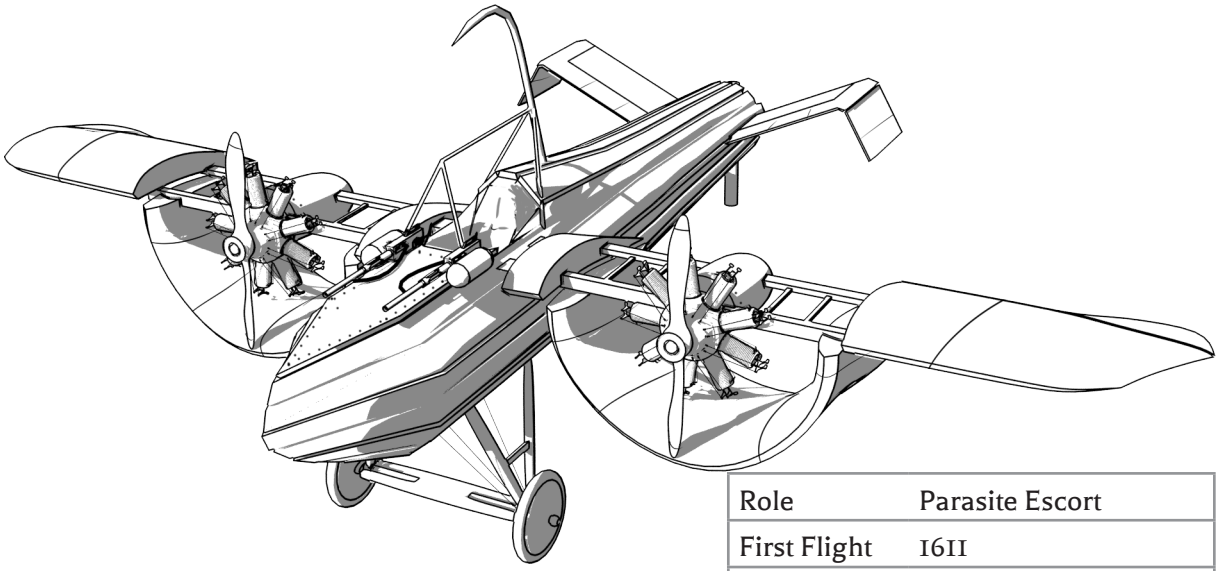
The Skyborn and towns in Gotha soon developed a scheme: the towns would stage crashes, write off the engine, and sell the 'scrap' to the Skyborn. The government would replace the plane, the town would get paid, and the Skyborn could now build an aircraft. Their first designs resembled Arntwerks c-series the engines were taken from, but used traditional airship building techniques.

The Shamsher was the most common of these designs, protecting Skyborn convoys through the Great War with their pneumatic guns. Though obsolete, the Skyborn throw nothing away, and they have been adapted to carry rockets for use against pirate airships, grounder defences, and, sometimes, rival convoys.

Common Variations

Like other Skyborn planes, no two Shamshers are alike. The most common variation one might see out in the world is original configuration versions without the rocket hardpoints.

Aircraft Factory Link



Role	Parasite Escort
First Flight	1611
Strengths	Extreme firepower
Weaknesses	No autopilot

Bahadur Escort

42þ New, 21þ Used

"Worth the Price"

2þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	3	100	14	6	17
Half Fuel	3	101	14	5	17
Empty	-	102	-	4	-

Vital parts

x2 Engines, x2 Oil Tanks, Guns, Landing Gear, Controls, Fuel Pilot

Dropoff 6, Reliability 0, Overspeed 20, Altitude 0-29, Fuel 7
Visibility -2, Stability -2, Energy Loss 5, Turn Bleed 2
Toughness 21, Max Strain 27, Escape +2, Crash 0, Stress 1
x2 Fixed Forward Pneumatic Heavy Machine Guns Zeppelin Hook

The Skyborn do not have the resources to pursue intense research and development of new aircraft types, so they are often slow to adopt new ideas. The more radical these new designs, the less likely they are to get traction. That a design as unusual as the Bahadur is starting to see widespread use should tell you how effective it is.

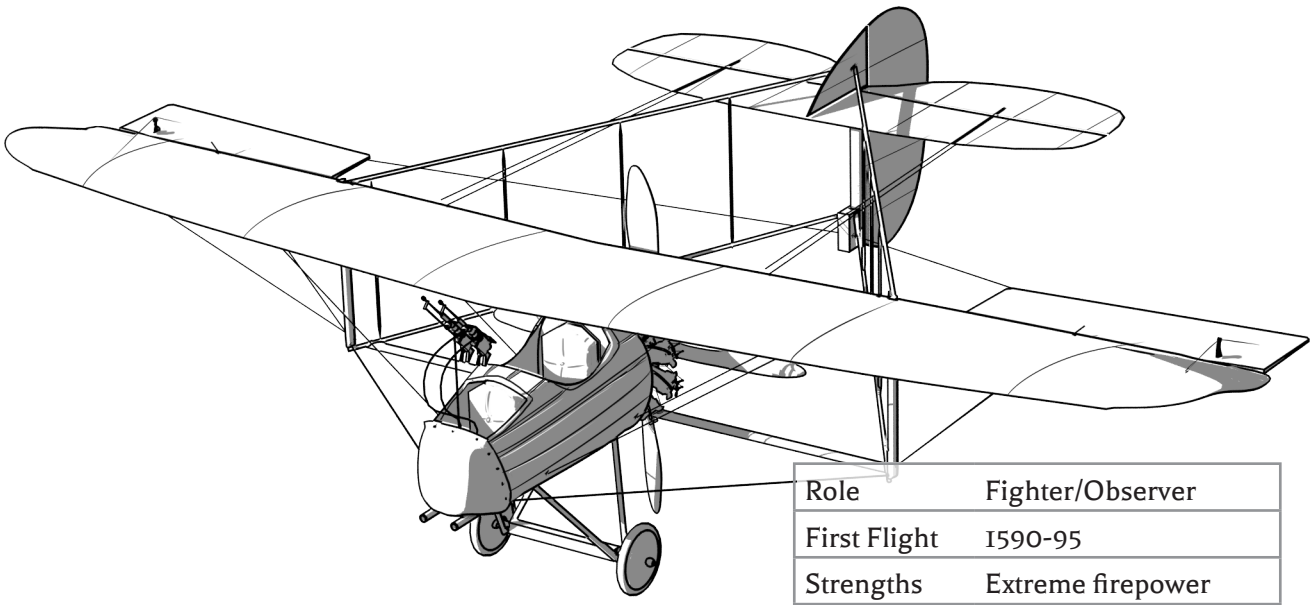
The aircraft has an unusual wing design with heavy birch wing spars instead of the usual tension structures. The channel around the engine both reduces drag and increases lift, and means that additional weapons can be mounted without interrupter gears.

Though they are gaining approval, they are still rare designs. Having to give up two engines to power them is a heft price for a convoy, and cuts are often made to other parts, most notably their autopilot, as well as engine cowling.

Common Variations

Due to the difficulty in aquiring matching engines, Skyborn convoys take any set they can find, meaning that Bahadurs have been powered by everything from tiny 80hp Rhona Motonbau ZIIs to expensive W.O.1 engines. Additional weapons such as pneumatic scatterguns are often used as well.

Aircraft Factory Link



Role	Fighter/Observer
First Flight	1590-95
Strengths	Extreme firepower
Weaknesses	Sluggish & Slow

Cheetal Fighter

31þ New, 15þ Used

"Poisoned Fang of the Sky Rangers"

2þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	88	8	8	16
Half Fuel	2	89	8	7	16
Empty	-	91	-	6	-

Vital parts

Engine, Oil Tank, Gun 1, Gun 2, Controls, Fuel, Landing Gear Pilot, Gunner

Dropoff 6, Reliability -1, Overspeed 21, Altitude 0-29, Fuel 13
Visibility +4/+4, Stability -4, Energy Loss 8, Turn Bleed 2
Toughness 7, Max Strain 37, Escape +2/+2, Crash 0, Stress 2/2
x2 Fixed Forward Pneumatic Scatterguns x2 Turret (Fore/Rear/Up/Left/Right) Accessible Pneumatic Scatterguns Rotary Engine (+1 to Dogfight when turning Right)

During the Great War, the Skyborn soon learned the value of sending scouts ahead of their convoys to avoid danger. These were usually armed airships, but these ships were not always fast enough to return with messages. Being a Sky Ranger, as they became known in Gotisch, was seen as nearly a suicide mission.

Building longer-range monoplanes to do the same task soon became a priority, and the Cheetal is the most common indigenous Skyborn design for these purposes. Though not the fastest or most agile, it is among the most heavily armed aircraft in the world for its size.

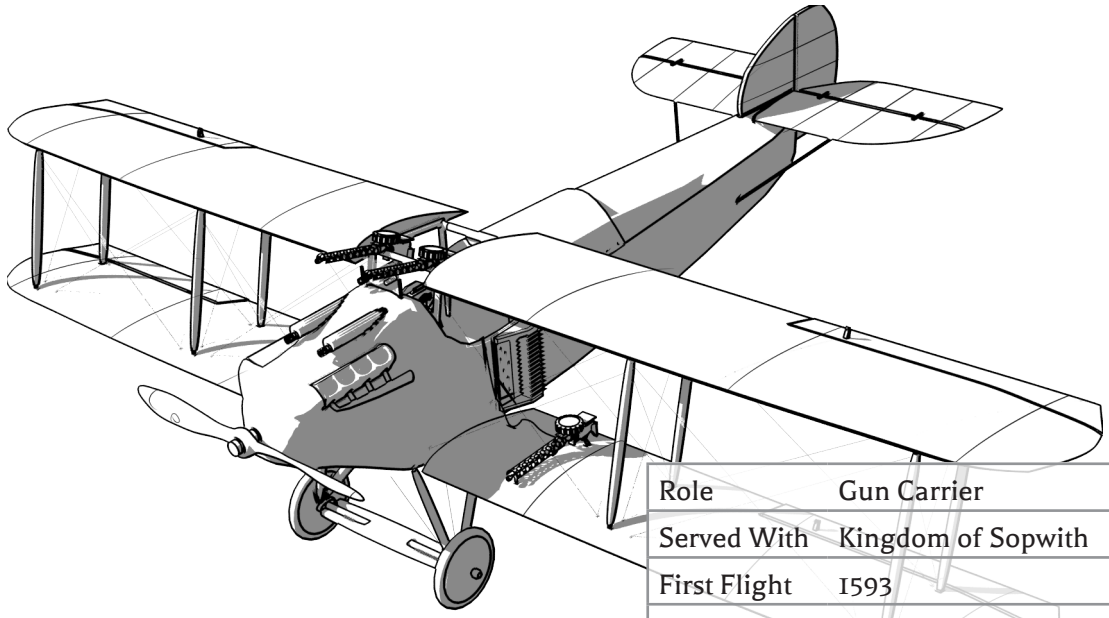
These planes are designed around a very rare engine, the near-mythical W.O 3 that powered the Ritter Model S. Skyborn ships were involved in salvage transport in Macchi at the end of the war, where examples and parts were acquired.

In addition to their uses as heavily armed outriders, convoys have begun hiring out the Cheetal Fighter as escorts for trade companies. Their pneumatic scatterguns are feared enough to deter any attack.

Common Variations

- Raid Rangers: Replace fixed scatterguns with bombload.

Aircraft Factory Link



Role	Gun Carrier
Served With	Kingdom of Sopwith
First Flight	1593
Strengths	Extreme firepower
Weaknesses	Poor dogfighter
Inspiration	*Sopwith Dolphin (1917)*

Markgraf Attentäter C

33þ New, 16þ Used

"The Winged Fusilier"

2þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	95	13	9	20
Half Fuel	2	95	13	8	20
Empty	-	96	-	7	-

Vital parts

Engine, Radiator, Oil Cooler, x2 Guns, Controls, Fuel, Gear Pilot

Dropoff 8, Reliability 0, Overspeed 42, Altitude 0-29, Fuel 7
Visibility -2, Stability -4, Energy Loss 4, Turn Bleed 2
Toughness 8, Max Strain 28, Escape +2, Crash -1, Stress 2
x2 Forward Accessible MGs, x2 Up Accessable Wing LMGs, x2 Forward Wing LMGs Low Radiator

The Königliche Sopwith Fliegerkorps developed a divergent combat philosophy from their mainland counterparts, believing that dogfighting and the "ace pilot" mentality was useless continental grandstanding that had no place in modern war.

Instead, the KSF used a tactic they referred to as the airborne gunline, and the Attentäter was designed for it from the ground up. Though neither as agile as most mainline fighters with its V8 engine, or as tough with its long, fragile wings, the Attentäter didn't need either. Fast in a straight line and controllable, it was designed to joust with enemy aircraft, and was exceedingly good at it.

These planes can carry as many as six machine-guns depending on its intended role. Its primary disadvantage is its violent stall characteristics, but KSF pilots were never expected to do much turning anyway.

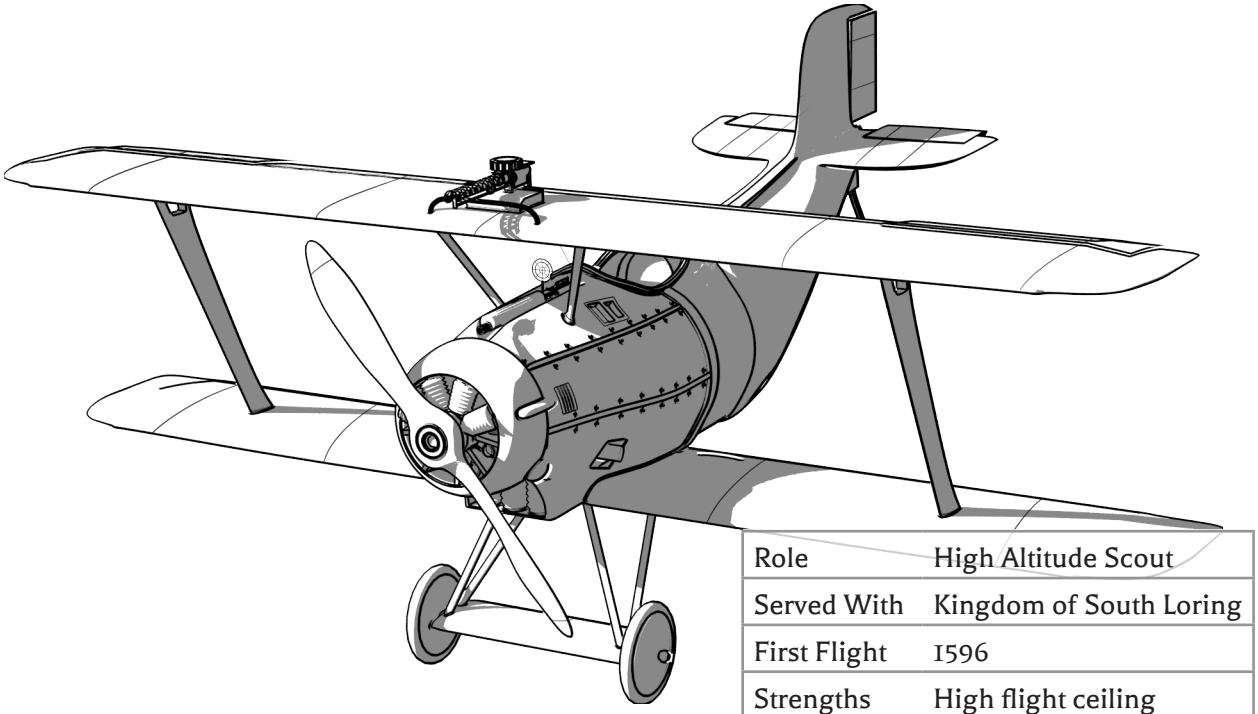
Gun Configurations

Either set of LMGs can be removed or added before a mission for no cost.

Attentäter E

Sopwith still operates this airplane in their much reduced military. Modern examples have SAM Transport I 300hp engines.

Aircraft Factory Link



Role	High Altitude Scout
Served With	Kingdom of South Loring
First Flight	1596
Strengths	High flight ceiling
Weaknesses	Middling performance

Königskondor L.I

69þ New, 34þ Used

"Guardian of the High Passes"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	96	14	6	18
Half Fuel	2	97	14	5	18
Empty	-	98	-	4	-

Vital parts

Engine, Oil Cooler, Guns, Controls, Fuel, Landing Gear
Pilot

Dropoff 12, Reliability 1, Overspeed 48, Altitude 0-49, Fuel II
Visibility -1, Stability +1, Energy Loss 7, Turn Bleed 1
Toughness 21, Max Strain 34, Escape +1, Crash +1, Stress 1
Fore Access MG, Fore Access MG, Fore Access Wing LMG, Collimated Gunsight (+1 Attack) Oxygen Mask, Negate 2 Injury from Go Down, Gyroscopic Autopilot

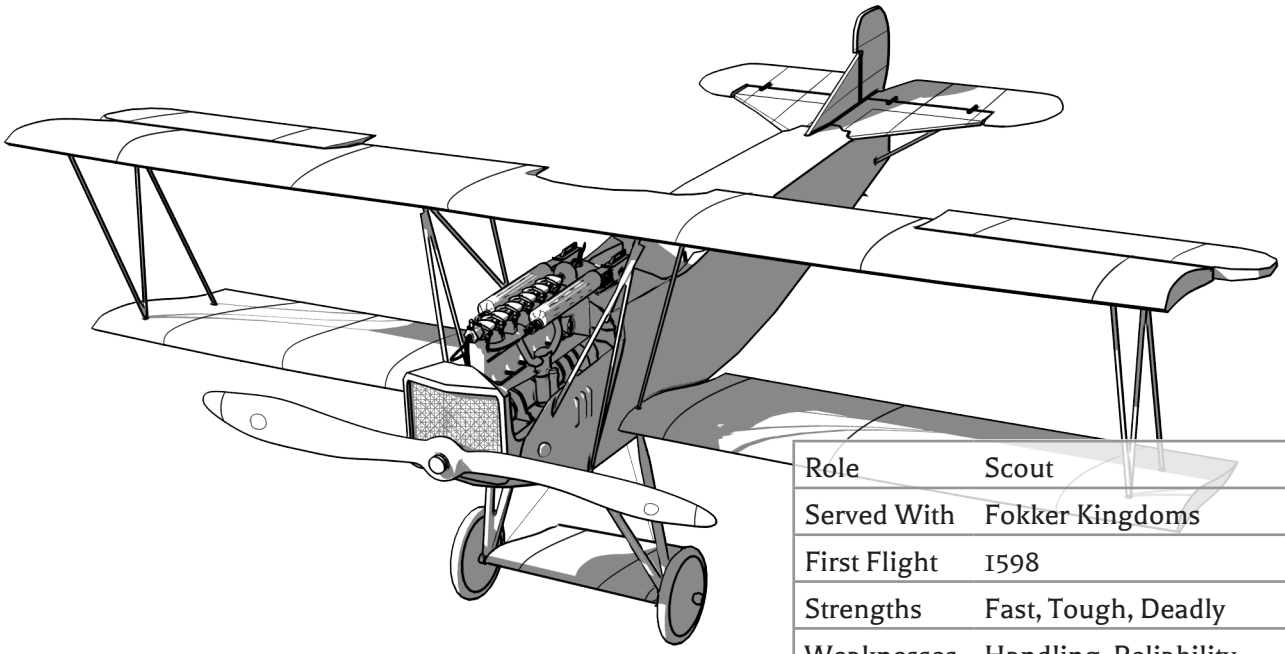
Dozens of small geo-states prior to the Great War had no aircraft industries of their own and had to buy aircraft from the Great Powers at extortionate prices. In addition to usually being obsolete surplus, these aircraft might not fit the mission profile required by their operators.

The small and mountainous Kingdom of South Loring was affected particularly badly. With all their population centers at least a kilometer above sea level, the Gotha and Macchi aircraft they could get weren't suitable. In the last years of the Great War, they studied these designs and built their own, complete with a two-stage supercharger.

The L.1 is rarely seen, but those who've faced it know it is a deceptively deadly machine. It has an immense power to weight ratio and is all around a good performer. Its odd and upward-swept tail gives it a very distinct appearence, and it is far tougher than it looks due to thick wing spars and robust construction, and hidden under its cowl is a third machine gun firing through the spinner.

While the Kingdom of South Loring no longer exists, there are several small republics in the region who use the machine exclusively. The heavily padded and reinforced cockpit is particularly valued, as it makes ditching the machine very safe.

Aircraft Factory Link



Role	Scout
Served With	Fokker Kingdoms
First Flight	1598
Strengths	Fast, Tough, Deadly
Weaknesses	Handling, Reliability
Inspiration	*Fokker D.VII (1918)*

von Morgen Vampyr

38þ New, 19þ Used

"The Butcher Bird"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	94	12	8	18
Half Fuel	2	94	12	7	18
Empty	-	95	-	7	-

Vital parts

Engine, Radiator, Oil Cooler, Landing Gear, Controls, Fuel Pilot

Dropoff 10, Reliability -3, Overspeed 24, Altitude 0-29, Fuel 6
Visibility -2, Stability +1, Energy Loss 4, Turn Bleed 2
Toughness 23, Max Strain 47, Escape +2, Crash -1, Stress 1
x2 Fixed Forward Accessable MGs Inline Radiator

The Vampyr was Fokker's secret weapon in the coming war against the Gotha Empire. The Vampyr was stockpiled for the coming conflict, but due to the paranoia of the royal family, only a handful were deployed. Presumably, there are thousands of them sealed away in warehouses somewhere in the gassed out cities of the former Fokker Kingdoms.

Those that have made it into the hands of pilots are frightening enough. They are often seen with cowls removed to save weight and make maintaining their overcompressed engines less of a hassle, as well as to impress onlookers.

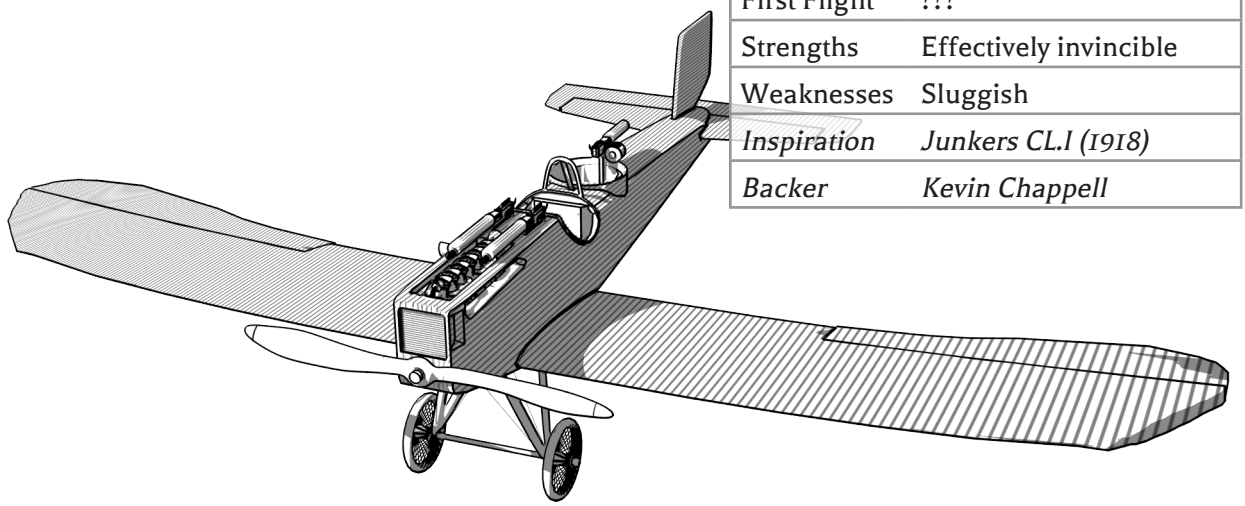
von Morgen Vampyr 240

Legend says that on the eve of the end, a number of Vampyrs were fitted with special high-compression engines. These near mythical aircaraft are said to be able to hang on the propeller in a stall climb, and the mere rumour of a Vampyr 240 can spark war between towns or Circuses. Those that claim to have one flaunt them by removing the cowl to show off the chrome finish.

A Vampyr 240 replaces the regular engine with a Schrankhut RD.300V with an altitude throttle, Speed propeller, prop gearing, and open cowl. You cannot start with a 240, even if you can afford it.

Aircraft Factory Link

Role	Fighter-Bomber
Served With	None
First Flight	???
Strengths	Effectively invincible
Weaknesses	Sluggish
Inspiration	*Junkers CL.I (1918)*
Backer	*Kevin Chappell*



Hugo's Einzigartiger Stahl-Jagdbomber! 66þ New, 33þ Used

"One of a Kind Steel Fighter-Bomber!" 1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	1	91	7	10	16
½, Bombs	1	92	7	9	16
Full Fuel	1	92	9	9	16
Half Fuel	1	92	9	8	16
Empty	-	93	-	8	-

Vital parts

Engine, Radiator, Oil Cooler, Pilot Guns, Gunner MG, Controls, Fuel, Landing Gear, Electrics

Pilot, Gunner

Dropoff 6, Reliability -3, Overspeed 36, Altitude 0-29, Fuel 7
Visibility 0/0, Stability -2, Energy Loss 5, Turn Bleed 2
Toughness 53, Max Strain 49, Escape +2/+2, Crash -1, Stress 1/1
x2 Fixed Forward Accessable MGs, Rear/Up Access Turret MG, 5 Bomb Mass Inline Radiator, x2 Oxygen Masks, 1 Charge Generation

The third of the commonly scene Bennhold designs, usually seen as having been developed alongside the similar, though much smaller "Hugo's Metallisches Jagdflugzeug!', this fighter saw some limited success in militias and smaller nations, but is undergoing something of a post-war renaissance.

Like all of Bennold's design, the One of a Kind Steel Fighter-Bomber has no official designation, known only by its advertising blurb. Though perhaps less than a hundred were made before the war, their blueprints are widely available, so anyone with aluminium production can make one.

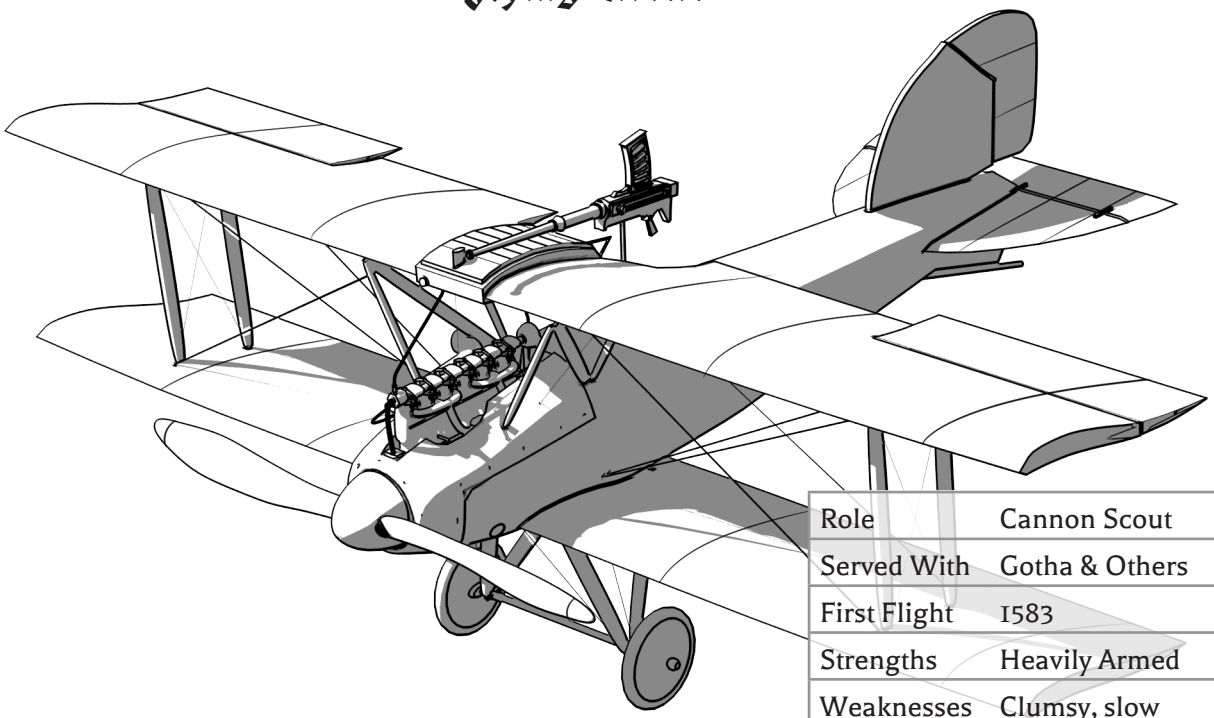
The machine is a great improvement over the first Bennhold design, with a more appropriate powerplant and a role that takes advantage of its robust construction.

The most common operators of these vehicles are shelter principalities, who often have the machine tools and materials to build them. Another prominent user is the aluminium-producing hydroelectic dam of Piav in the Fokker Mountains, operated by the communal militia.

Common Variations

- Original: No rockets. Reinforcements removed.

Aircraft Factory Link



Role	Cannon Scout
Served With	Gotha & Others
First Flight	1583
Strengths	Heavily Armed
Weaknesses	Clumsy, slow
Inspiration	*Albatros D.II (1915)*

Theler Kobra MB (KanoneKobra)

32þ New, 16þ Used

"The Burn Ward"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	95	12	6	16
Half Fuel	2	95	12	5	16
Empty	-	96	-	5	-

Vital parts

Engine, Radiator, Oil Cooler, Landing Gear, Pilot, Passenger, Controls, Fuel

Dropoff 9, Reliability -2, Overspeed 24, Altitude 0-29, Fuel 6

Visibility -1, Stability +1, Energy Loss 5, Turn Bleed 1

Toughness 12, Max Strain 30, Escape +2, Crash -1, Stress 1

Flex Fore/Up Wing Light Repeating Cannon
High Radiator (Dumps water in face!)

The Theler Kobra MA was revolutionary when it first hit the field. Though heavy and sluggish even then, the fact it carried two synchronized machine guns put it miles ahead of the competition.

It wasn't without problems, though. Most notable was the bulky box radiator, which not only caused a lot of drag but tended to drain rapidly if damaged. The MA was swiftly replaced with the upgraded MB model, which moved the radiator to a panel in the upper wing to solve both problems.

Only issue was that if damaged, the radiator tended to dump boiling water in the pilot's face.

Though the problem was known, the MB stayed in production. Once the MC entered service, the MBs were pulled back to secondary duties. Balloon hunting with 20mm cannons were common, a hated job as you have to stand up to reload.

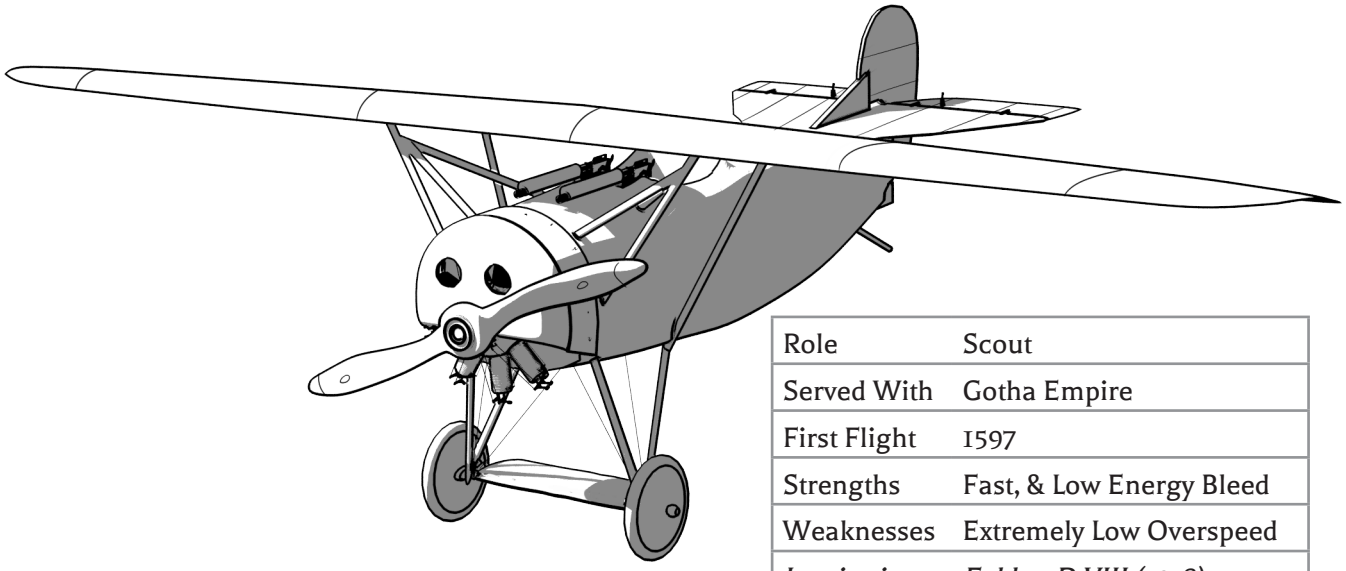
Stock Configurations

The Kobra can be returned to stock configuration by removing the cannon and adding 2 fixed forward accessible uncovered hull MMGs instead.

Common Variations

- MA: Replace radiator with Low Box radiator.
- Field Fix: Offset high radiator, Wing Cutout.

Aircraft Factory Link



Role	Scout
Served With	Gotha Empire
First Flight	1597
Strengths	Fast, & Low Energy Bleed
Weaknesses	Extremely Low Overspeed
Inspiration	*Fokker D.VIII (1918)*

Kreuzer Skorpion

34þ New, 17þ Used

"Gotha's Hunting Razors"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	100	14	8	20
Half Fuel	2	100	14	7	20
Empty	-	102	0	6	-

Vital parts

Engine, Oil Tank, Guns, Controls, Fuel, Landing Gear
Pilot

Dropoff 8, Reliability -2, Overspeed 20, Altitude 0-29, Fuel 7
Visibility 0, Stability -4, Energy Loss 2, Turn Bleed 2
Toughness 16, Max Strain 37, Escape +2, Crash 0, Stress 3
x2 Fixed Forward Accessable MGs, Rotary Engine (+1 to Dogfight when turning Right)

With the end of the War in Macchi, the Gotha Empire seized both the powerful Ritter engines and the tooling to make more. But the question soon arose: what to do with the thousands of 110hp engines already produced?

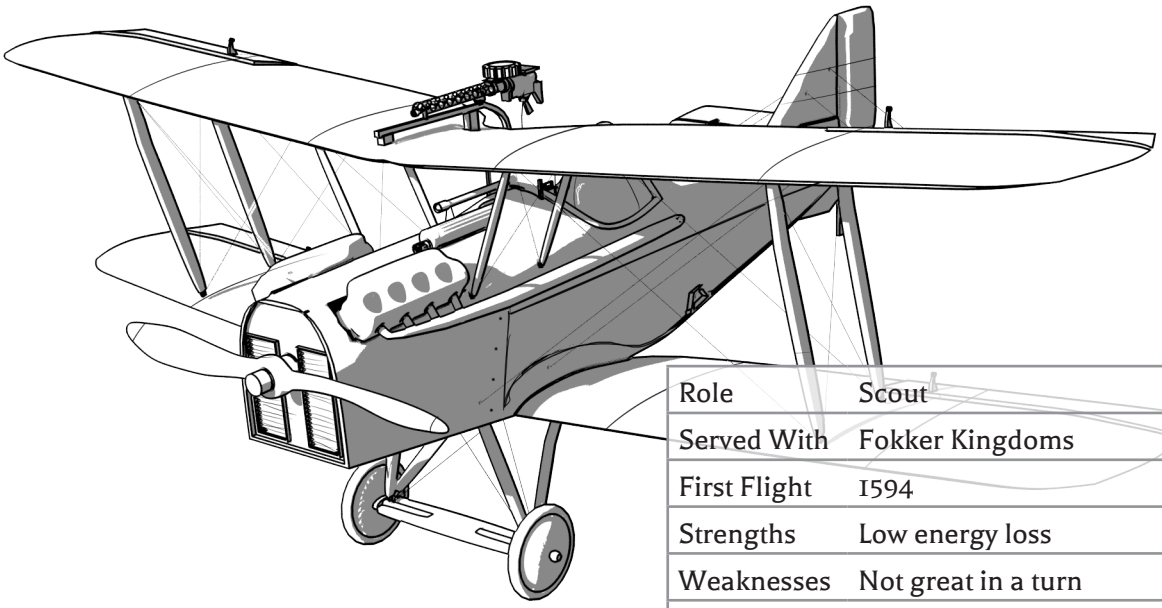
They might have just rotted away, but Kreuzer proposed a lightweight, streamlined scout using the powerplant to supplement other forces, which would use parts commonality with the Spinne to keep costs down. The project was approved as the Skorpion, a para-monowing single-seater whose steel tube construction and birch cantilever made it faster than its aging engine should have allowed.

In the final build-up, the Skorpion was swiftly issued to regional defence squadrons across the continent. They never saw action properly, and so are often overlooked by combat pilots hunting for wartime staples. This means that a surprising number end up in the hands of the desperate, who don't know enough to mistakenly dismiss it on the engine power alone.

Common Variations

- Ritter Engine: Schreiber B.IX engine.
- Racing Plane: Remove weapons.

Aircraft Factory Link



Role	Scout
Served With	Fokker Kingdoms
First Flight	1594
Strengths	Low energy loss
Weaknesses	Not great in a turn
Inspiration	*RAF SE5a (1917)*
Backer	*Daniel Kwan*

König-Werke Adler-N

26þ New, 13þ Used

"Fokker's Cloud Stalkers"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	98	12	8	18
Half Fuel	2	98	12	7	18
Empty	-	99	-	6	-

Vital parts

Engine, Radiator, Oil Cooler, Landing Gear, Guns, Controls, Fuel Pilot

Dropoff 7, Reliability 0, Overspeed 37, Altitude 0-29, Fuel 8

Visibility -2, Stability -1, Energy Loss 3, Turn Bleed 2

Toughness 7, Max Strain 33, Escape +2, Crash -1, Stress 1

Fixed Forward Accessable MG, x1 Flexible Forward/Up Accessable Wing LMG
Collimated Gunsight (+1 Attack), Inline Radiator

The KW Adler-N, often simply known by its abbreviation to pilots, ended up serving as Fokker's primarily scout for the back half of the Great War. It's design reflected the Fokker Kingdom's combat philosophy, with an emphasis on speed and technical sophistication.

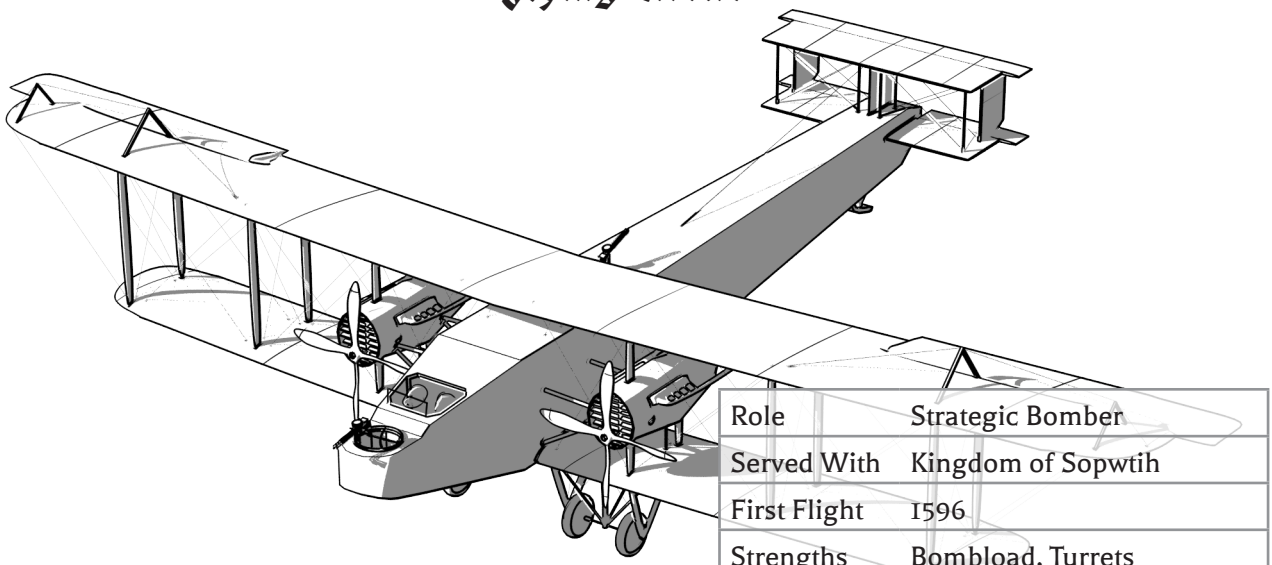
The original KW-AA was intended to match the agility of the Ritter rotaries, but it failed miserably in combat trials, being easy prey for enemy Singvogels. Ultimately, however, it took a fairly minor modification to become competitive: the replacement of the four-bladed, direct drive propeller with a geared, two-bladed one.

Suddenly, the KW-AN could fight in the vertical with the same ease the Ritter planes fought in the turn, and it was back in the running. It would serve with distinction until the end of the war, upgraded with larger powerplants as the war wore on.

Common Variations

- KW-AA: Power propeller. 2 Mass bombs.
- Sniper Mode: Remove MMG. Replace LMG with Precision Rifle in the same mount.
- KW-SA: Change landing gear to floats.
- Late Model: Change cockpit to Narrow Canopy, upgrade powerplant to .

Aircraft Factory Link



Role	Strategic Bomber
Served With	Kingdom of Sopwtih
First Flight	1596
Strengths	Bombload, Turrets
Weaknesses	Extremely sluggish
Inspiration	*Handley-Page o/400 (1916)*

Markgraf Volksfestung A

88þ New, 44þ Used

"The People's Doomsday Device"

7þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	55	9	6	13
½, Bombs	2	62	9	4	13
Full Fuel	2	63	12	4	14
Half Fuel	2	66	12	3	14
Empty	-	69	-	3	-

Vital parts

x2 Engine, x2 Oil Coolers, x2 Radiators, x3 Guns, Controls, Fuel, Landing Gear, Electrics
Pilot, Copilot, Nose Gunner, Rear Gunner, Belly Gunner

Dropoff II, Reliability -1/-1, Overspeed 32, Altitude 0-29, Fuel II

Visibility -1/-1/-1/-1, Stability -1, Energy Loss 10, Turn Bleed 1

Toughness 36, Max Strain II, Escape +2/+2/+2/+2, Crash -1, Stress 1/1/1/1

36 Bomb Mass, Inline Radiators, Intercom, Windmill (1 Charge), Connected Crew Positions
Copilot: Controls, Quality 10 Bombsight. Nose Gun: Turret Fore/Up/Down/Left/Right Access LMG
Rear Gun: Flex Up/Rear Access LMG. Belly: Turret Down Access LMG

Among the grimmest of the Kingdom of Sopwith's policies was the Volksfestung Program, where villages were given responsibility to maintain, train on, and if needed fly a heavy bomber. The industrial outlay involved in this project was immense, each aircraft requiring two engines larger than any fitted to a fighter and enough guns to arm two scouts.

To build enough aircraft to equip a full bombing force and then hold them completely in reserve involved bankrupting the previously-rich Kingdom of Sopwith entirely and levying punitive taxes at all levels of society.

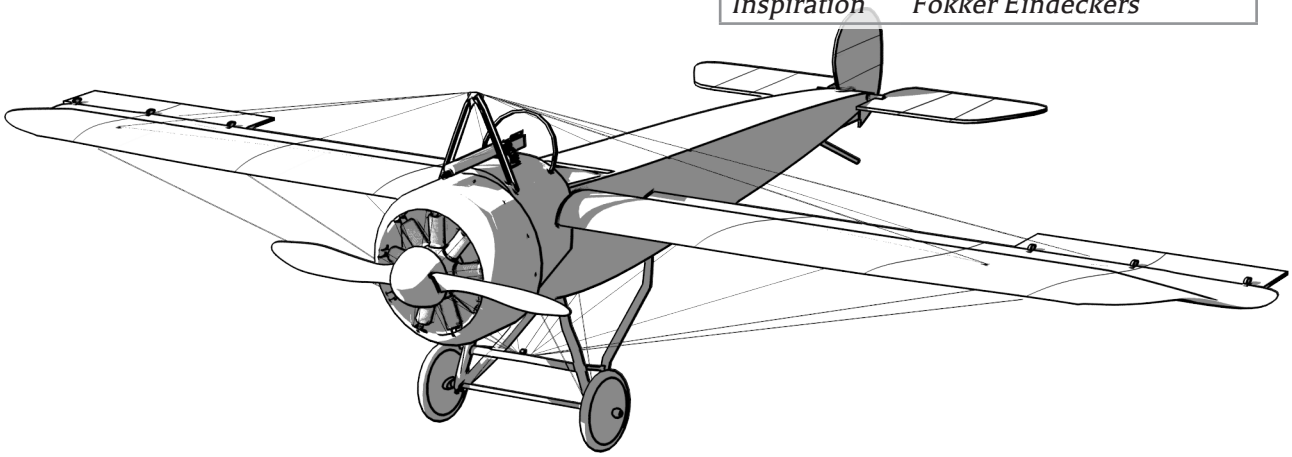
Unlike others, when the time came, these bombers had somewhere to come back to. Bombers, fewer each day, returned to the villages, loved ones snatching moments with each other as fuel and bombs were fitted and then taken aloft again. Eventually no bombers came back at all. The pilots and aircraft had scattered across the continent, preferring to risk the kindness of their victims to having to fly one more gas mission.

Common Variations

- Sky-Train Hunter: Removes exterior bombload. Replaces forward machine-gun with a recoilless cannon.

Aircraft Factory Link

Role	Militarized Racing Plane
Served With	Militia
First Flight	1580
Strengths	Fast and Cheap
Weaknesses	Underarmed
Inspiration	*Fokker Eindeckers*



Arntwerks c.7 Rennflugzeug

17þ New, 8þ Used

"Now this is air racing!"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	103	13	6	18
Half Fuel	2	103	13	5	18
Empty	-	104	0	4	-

Vital parts

Engine, Oil Tank, Landing Gear, Controls, Fuel, Gun Pilot

Dropoff 5, Reliability -1, Overspeed 24, Altitude 0-49, Fuel 6

Visibility 0, Stability -4, Energy Loss 3, Turn Bleed 2

Toughness 6, Max Strain 30, Escape +2, Crash 0, Stress 2

Fixed Forward Accessible MG, Rotary Engine (+1 to Dogfight when turning Right)
Altitude Throttle (Can WEP at altitudes 0-10)

Before the war, the c.7 race plane was a fairly common sight, with many villages owning one to compete in racing leagues. They were one of the first aircraft ever to use ailerons instead of wing-warping, which was such a new technology that the later military versions reverted to the older control scheme due to reliability concerns.

After the war broke out, many rural villages retrofitted their c.7s with interrupter gears in the style of the c.10. They were better, one for one, than the c.10s used in the military. That said, they were also expensive custom aircraft, and for every militarized c.7 racer, there were a hundred c.10s.

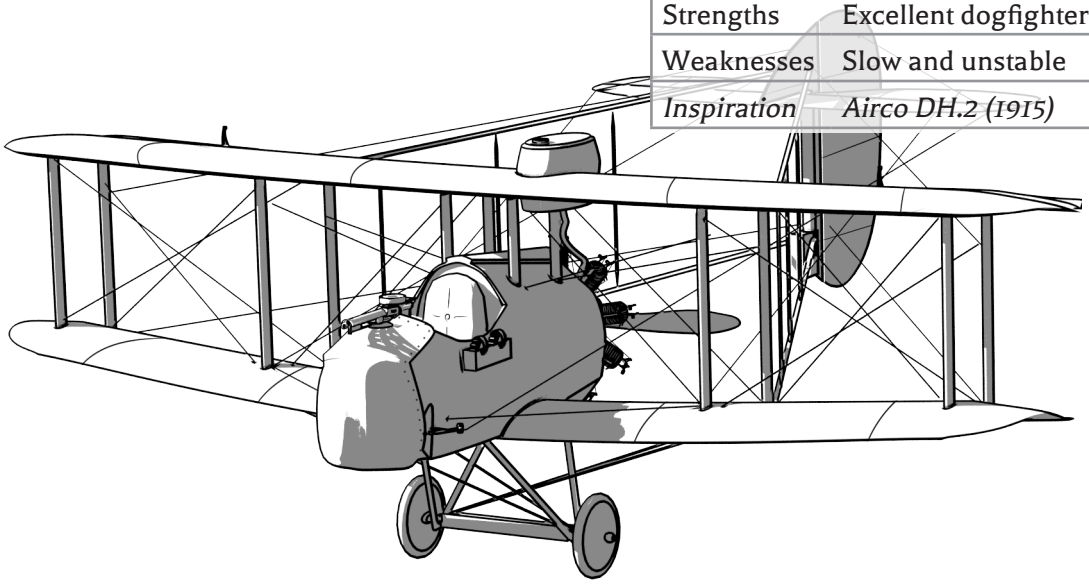
These days, the c.7 is a common sight in the hands of rural militias and adventurers. They have the advantage of appearing like a generic c.10 until you get close, disguising their potential speed, and many of them have been upengined or otherwise improved. In some places, the old racing leagues have even started back up.

Common Variations

By this point, every racing plane is a unique beast, with a wide variety of unusual engines in use. A common factor is altitude throttles: nearly every racer goes out of their way to kludge in some sort of fuel additive injector for an extra boost.

Aircraft Factory Link

Role	Scout
Served With	UWF
First Flight	1579
Strengths	Excellent dogfighter
Weaknesses	Slow and unstable
Inspiration	*Airco DH.2 (1915)*



Mitscher IG J-79SF

11þ New, 5þ Used

"Let's try spinning, that's a good-"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	3	105	14	3	14
Half Fuel	4	105	14	2	14
Empty	-	106	-	2	-

Vital parts

Engine, Oil Tank, Guns, Controls, Fuel, Landing Gear
Pilot

Dropoff 8, Reliability -3, Overspeed 20, Altitude 0-29, Fuel 7
Visibility +3, Stability -7, Energy Loss 4, Turn Bleed 1
Toughness 5, Max Strain 25, Escape +2, Crash -1, Stress 2
Forward Accessible Scattergun Rotary Engine (+1 to Dogfight when turning Right)

The lead designer of Mitscher Industrielle Gesellschaf, Johan Farmann, was a great proponents of the central pusher engine to avoid shooting one's own propeller. This handy little scout was a testbed for the idea, though it had bad teething problems and didn't make field service until late 1582.

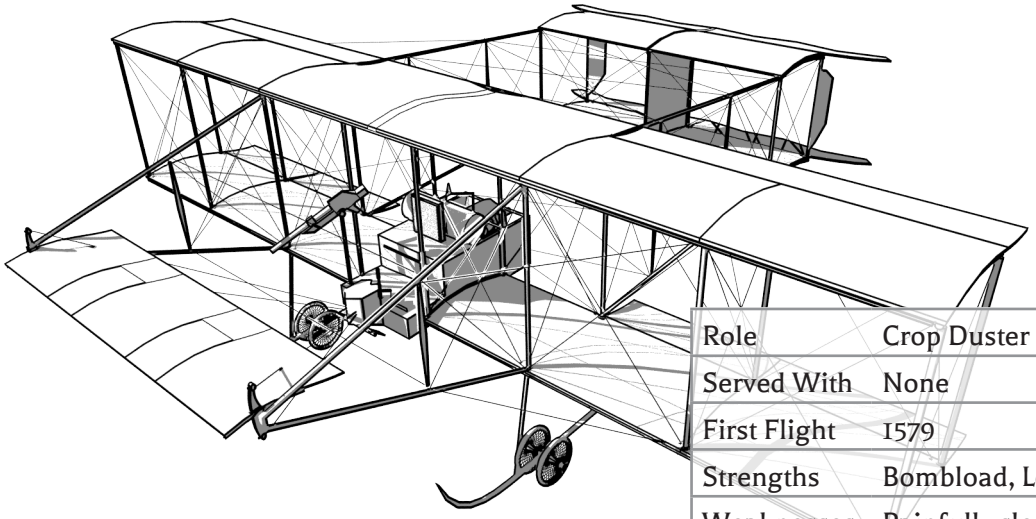
Displaying superb handling and a dismaying tendency to kill novice pilots, this machine was the great rival to the Arntwerks c.10 series. Though MIG produced a great number, thousands more built under licence by Ritter, to the point where many believe they are an original Ritter design.

After the war they have seen a second lease of life as cropdusters, the pusher propeller apparently aiding chemical dispersal. If you own one now then the odds are good that this is not one of the ones with the manufacturing defect that causes cylinders to fly off the rotary engine and set fire to the aircraft. Not great odds, but good odds.

Common Variations

- Ritter Sperling A - License production
- J-79MG/ Sperling B - LMG instead of Scattergun
- J-79/83 - +1 Dihedral to both wings

Aircraft Factory Link



Role	Crop Duster
Served With	None
First Flight	1579
Strengths	Bombload, Low stall
Weaknesses	Painfully slow
Inspiration	*Bristol Boxkite (1910)*

Recht Luftschlepper

22þ New, 11þ Used

"The tractor will do!"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	95	9	4	11
½, Bombs	2	96	9	3	11
Full Fuel	2	97	11	3	12
Half Fuel	2	97	11	2	12
Empty	-	98	-	2	-

Vital parts

Engine, Radiator, Oil Cooler, Gun, Landing Gear, Controls, Fuel

Pilot, Gunner

Dropoff 7, Reliability -1, Overspeed 28, Altitude 0-29, Fuel 15
Visibility +4/+4, Stability -4, Energy Loss 9, Turn Bleed 1
Toughness 10, Max Strain 46, Escape +2/+2, Crash -1, Stress 2/2
Accessible Punt Gun Turret (Fore/Rear/Up/Left/Right), 10 Mass bombs Inline Radiator

An common civilian plane and likely to the longest produced aircraft in the world, the Recht Air Tractor was designed from the ground up as an agricultural tool. With a heavy diesel engine, it can move suprising loads, making it adept as a transport, crop duster and topdressing, utility cargo mover, trade platform, and cloud seeding.

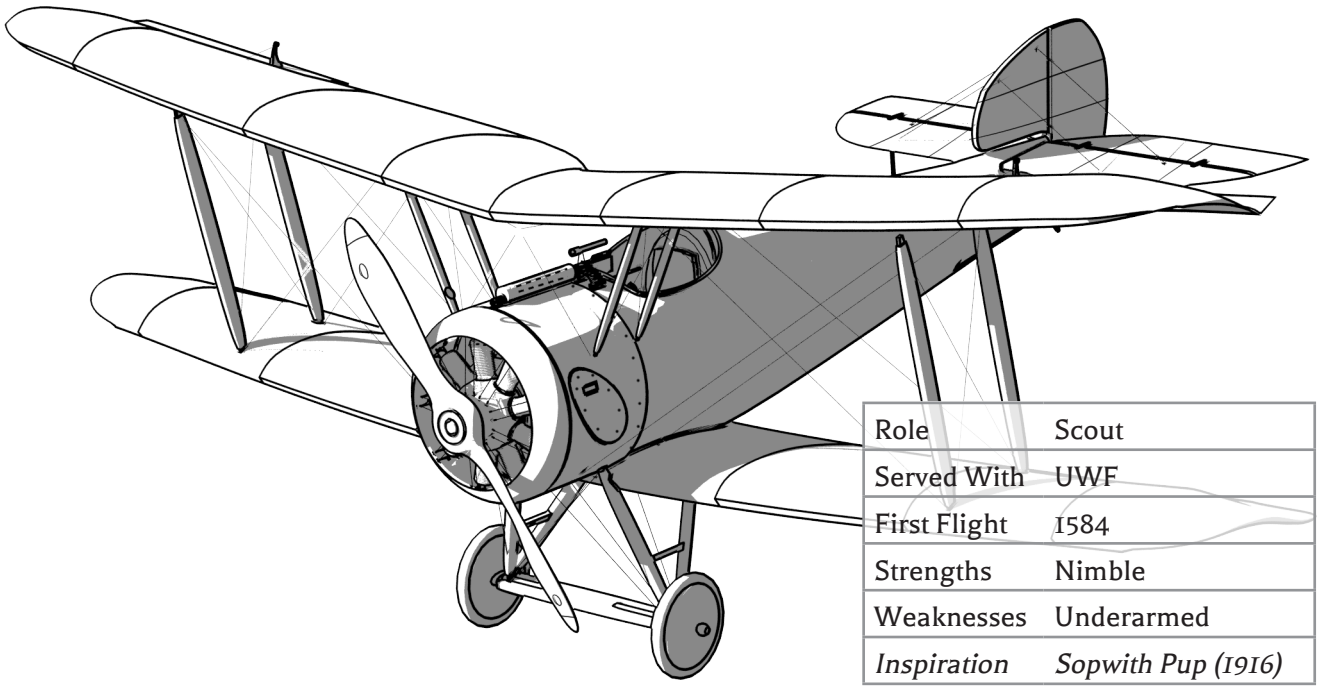
Though nobody would think of using these aircraft as a front-line combat machine, many have been pressed into this role over the years. Thanks to its surprising load capacity, it can carry a fair number of bombs a fair distance, so they were sometimes used in dangerous night bombing missions.

Nowadays, agricultural towns often count these machines among the forces their militia could potentially use, in an emergency, and a great many bush pilots got their start in ground attack by training to drop barrel bombs from an armed farm tractor.

Common Variations

Luftschleppers have been powered by every kind of engine under the sun over the years, as farmers retrofit it for whatever is on hand or appropriate for the job. Weapons, if present, are also highly variable.

Aircraft Factory Link



Role	Scout
Served With	UWF
First Flight	1584
Strengths	Nimble
Weaknesses	Underarmed
Inspiration	*Sopwith Pup (1916)*

Ritter Model Cj 'Spatz'

14þ New, 7þ Used

"Could take on a whole empire by itself!"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	98	9	8	15
Half Fuel	2	98	9	7	15
Empty	-	99	-	7	-

Vital parts

Engine, Oil Tank, Guns, Controls, Fuel, Landing Gear
Pilot

Dropoff 9, Reliability -1, Overspeed 20, Altitude 0-29, Fuel 7
Visibility -1, Stability 0, Energy Loss 4, Turn Bleed 2
Toughness 8, Max Strain 28, Escape 0, Crash -1, Stress 2
Fixed Forward Accessible MG, Collimated Gunsight (+1 Attack) Rotary Engine (+1 to Dogfight when turning Right)

Ritter's first interrupter-geared scout, the Ritter Model C is remarkably easy to fly for a rotary-engine plane due to its long tail. This hurt manoeuvrability but Ritter considered it a worthwhile tradeoff to prevent the deadly spins and stalls so common in early air combat.

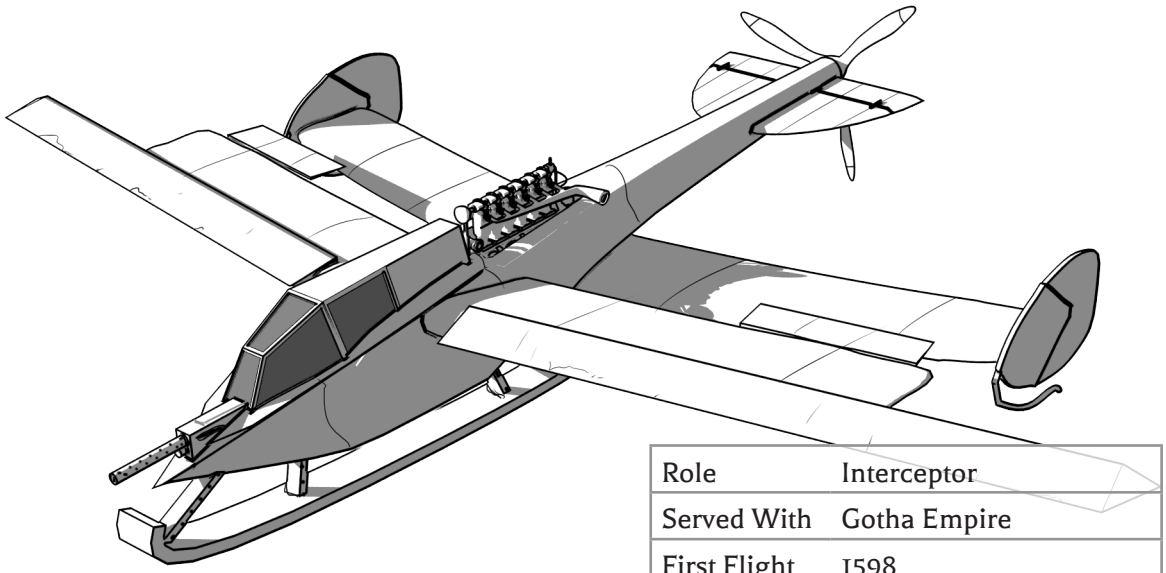
The aircraft was popular with crews and helped to build the UWF Luftwaffe into a corps of experienced pilots who were capable of handling more difficult designs. After the introduction of the Singvogel the Spatz was mostly moved to advanced training squadrons because of its similar characteristics.

Large numbers of Spatz of all variants survived the war and the same docile characteristics make it an ideal fighter for poorly-trained militia today. The fact it can be mistaken at a distance for the Model F or S helps, and some aircraft are deliberately painted with disruptive patterns to make the tail look shorter and the stance of the aircraft more aggressive to assist this deception.

Common Variations

- C Spatz: 80hp engine
- Cz Spatz: Twin overwing flex LMG, no MMG
- Ca Spatz: 2nd seat, copilot controls, short tail

Aircraft Factory Link



Role	Interceptor
Served With	Gotha Empire
First Flight	1598
Strengths	Plane with a sword
Weaknesses	Plane with a sword
Backer	*Richard Kreutz-Landry*

Theler Zweihänder

40þ New, 20þ Used

"High-Flying Duelist"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	99	10	9	17
Half Fuel	2	99	10	8	17
Empty	-	100	-	7	-

Vital parts

Engine, Radiator, Oil Cooler, Gun, Controls, Fuel
Pilot

Dropoff 5, Reliability -1, Overspeed 24, Altitude 0-29, Fuel 6
Visibility 0, Stability +4, Energy Loss 4, Turn Bleed 2
Toughness 21, Max Strain 33, Escape 0, Crash 0, Stress 1
Accessible Fore LMG, Low Radiator, Wing Blades Landing Skid (page 191)

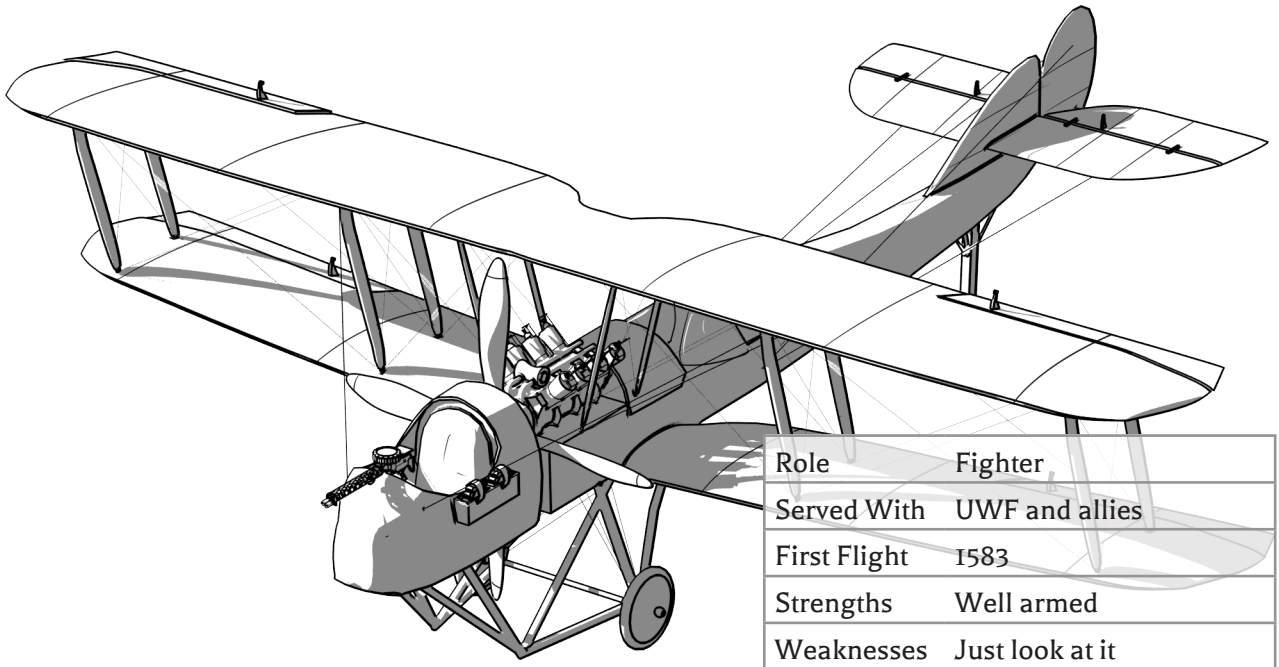
The Gotha Empire celebrated its 200th anniversary with an usual sight: a close formation of high-performance aircraft (for the era) flying in close formation above Kaisergrab. This was the start of a long and proud Gotha tradition of close stunt flying to celebrate the power and skill of the Empire's airmen.

To celebrate the victory of Macchi, the stunt teams were issued the Theler Stare, named for the flocking bird. These machines were not designed for combat, but instead as stable platforms for careful formations, with tandem wings and a rear propeller on an extended driveshaft.

When the final war with Gotha broke out, many of these machines were redesigned into emergency bomber interceptors, using blades on their wings to cut apart incoming aircraft. This duty was considered quite nearly suicidal, and with discipline breaking down there were increasingly few pilots willing to risk it.

Large numbers of these aircraft survived the war. Launched from outlying bases to defend cities which were often already lost, their pilots would simply fly away to rural areas and be marked as losses. Only the most foolhardy pilot would try to use these machines in their intended role.

Aircraft Factory Link



Role	Fighter
Served With	UWF and allies
First Flight	1583
Strengths	Well armed
Weaknesses	Just look at it
Inspiration	*B.E.9 Pulpit (1915)*

Mitscher IG J-83 'Geistliche'

17þ New, 8þ Used

"An Ongoing Mistake"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	94	II	5	I4
Half Fuel	2	94	II	4	I4
Empty	-	95	-	4	-

Vital parts

Engine, Oil Cooler, Gun, Controls, Fuel, Landing Gear
Pilot, Gunner

Dropoff 5, Reliability +1, Overspeed 23, Altitude 0-29, Fuel 10

Visibility -1/-2, Stability +2, Energy Loss 4, Turn Bleed 1

Toughness 9, Max Strain 38, Escape +2/+2, Crash -1, Stress 0/0

Gunner: Accessible Fore/Up/Left/Right Turret Gast LMG,
Telescopic Sight (+1 after Draw a Bead), Isolated (cannot leave seat)

The MIG J-83 is the result of the absurd conditions of the war before the invention of the interrupter gear. The earlier AJ-80/82 wedged a gunner behind the pilot with a flexibly mounted machine gun, but found difficulty fighting effectively. A gun mount on the front of the aircraft was devised instead, using supports hung around the propeller for a basket containing a LMG and a brave gunner.

The aircraft's combat service was disastrous. UWF observers assigned to the plane had a combat life expectancy of three hours, compared to a pilot's forty eight hours. Most pilot losses were psychological casualties.

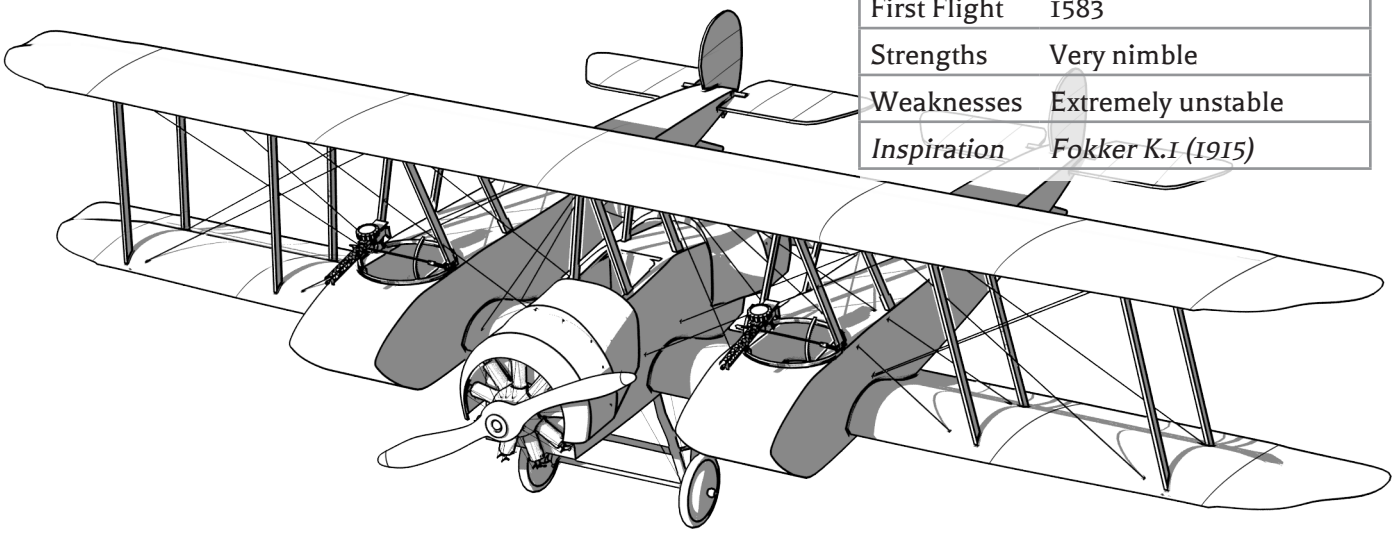
Today most J-83s are flown as single-seaters, using the basket for cargo hauling. Only the most suicidally brave observers would get in an J-83. But then, if you are the observer in an J-83 everyone knows you are suicidally brave, which has its benefits in bars.

Common Variations

- J3: Remove Isolate, remove LMG.
- J4: Remove Isolate, change gun to Rear/Up.
- Strengthened: Add Padding and roll cage.
- Waffentrager: Replace the turret with a fixed inaccessable Heavy Cannon.

Aircraft Factory Link

Role	Fighter
Served With	Gotha Empire
First Flight	1583
Strengths	Very nimble
Weaknesses	Extremely unstable
Inspiration	*Fokker K.1 (1915)*



Arntwerks d.13

21þ New, 10þ Used

"A Failure of Aerodynamics"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	1	100	7	7	13
½, Bombs	1	102	7	5	13
Full Fuel	2	102	10	5	13
Half Fuel	2	103	10	4	13
Empty	-	104	-	4	-

Vital parts

x2 Engines, x2 Oil Tanks, x2 Guns, Controls, Fuel, Landing Gear

Pilot, Gunner 1, Gunner 2

Dropoff 5, Reliability -3, Overspeed 16, Altitude 0-29, Fuel 13

Visibility -1/-1/-1, Stability -9, Energy Loss 5, Turn Bleed 1

Toughness 11, Max Strain 46, Escape +2/+2/+2, Crash -1, Stress 3/3/3

Rotary Engine (+1 to Dogfight when turning Right), Wing Warping (+1 to Dogfight when <15 Speed)
8 Mass Bombs
x2 Turret Access LMG (One Fore/Up/Right, one Fore/Up/Left)

The Arntwerks d.13 was a design any other company would call a failure. Using only components from the c.5 series of observers, the aircraft was intended to act as a heavy fighter with two gun positions that could fire uninterrupted by propellers. Unfortunately the use of wing warping controls and the two independent tails meant that when the aircraft was rolled the tails deflected in different directions.

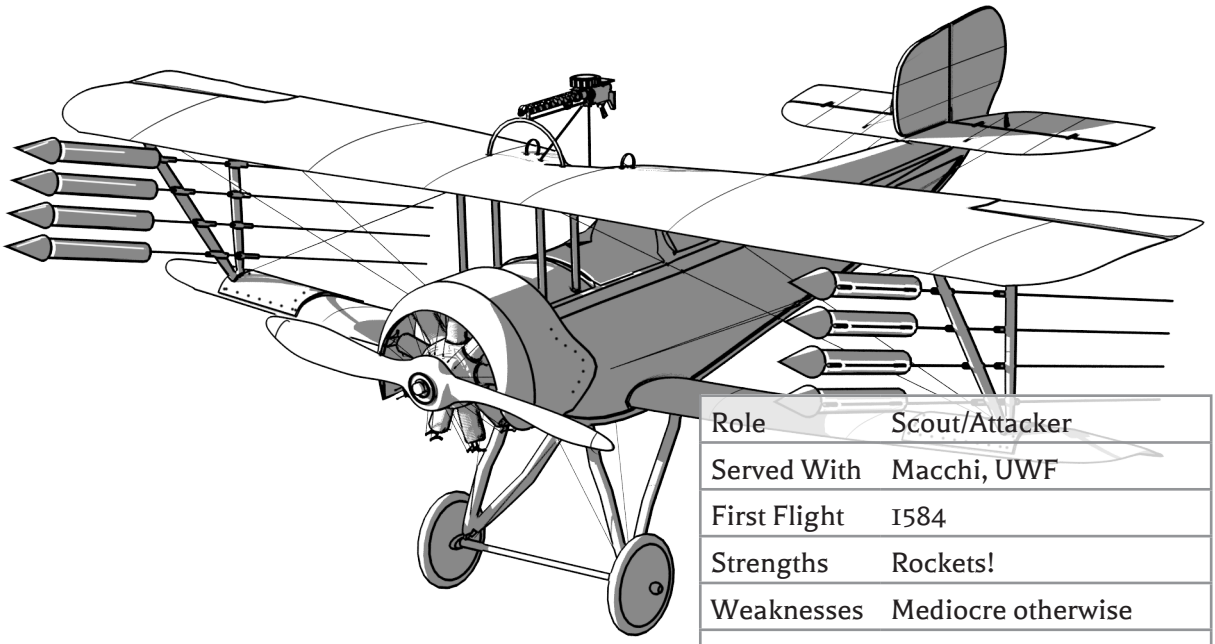
This led to what the first test pilot to return described as "very divergent flight characteristics", but Arntwerks was already tooled to make the d.13 and orders for thousands had been made.

It was found that if the aircraft was handled with sufficient care it made a decent strafer, and was agile enough to tangle with interceptors. But by that point most had been dispersed to secretarian paramilitaries who were considered stupid and expendable enough to be entrusted with it.

Common Variations

The main priority of most wise pilots who find themselves having to fly a d.13 is to add flap ailerons as soon as possible. Less wise pilots try to replace the tiny Schreiber L.VII engines with something bigger, or add larger guns to the pods, including fixed guns to use as a fighter.

Aircraft Factory Link



Role	Scout/Attacker
Served With	Macchi, UWF
First Flight	1584
Strengths	Rockets!
Weaknesses	Mediocre otherwise
Inspiration	*Nieuport 11 (1916)*

Rathenau-9c

13þ New, 6þ Used

"Macchi's Unsung Heroes"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	99	9	8	15
½, Bombs	2	100	9	6	15
Full Fuel	2	100	12	6	16
Half Fuel	2	100	12	5	16
Empty	-	101	-	4	-

Vital parts

Engine, Oil Tank, Gun, Controls, Fuel, Landing Gear

Pilot

Dropoff 9, Reliability -1, Overspeed 20, Altitude 0-29, Fuel 7
Visibility -1, Stability -1, Energy Loss 3, Turn Bleed 1
Toughness 6, Max Strain 21, Escape +2, Crash -1, Stress 2
Forward Accessable Wing LMG, 4 Mass Rockets Rotary Engine (+1 to Dogfight when turning Right)

Combat in the early years of the war showed the complete superiority of any aircraft that could fire directly forwards. Rathenau's first type, the 7, used a deflector plate but this was obviously a stopgap and Meike Kessler, Rathenau's chief designer, drew up a clean sheet aircraft in 1582.

The resulting Rathenau-9 was Macchi's primary fighter aircraft, at least until the Ritter company moved their factories there in 1587. It provided good handling but was infamous for breaking up in dives. The Rathenau-11 mostly fixed this issue and added another machine gun in an attempt to keep up with the Kobra types coming into service.

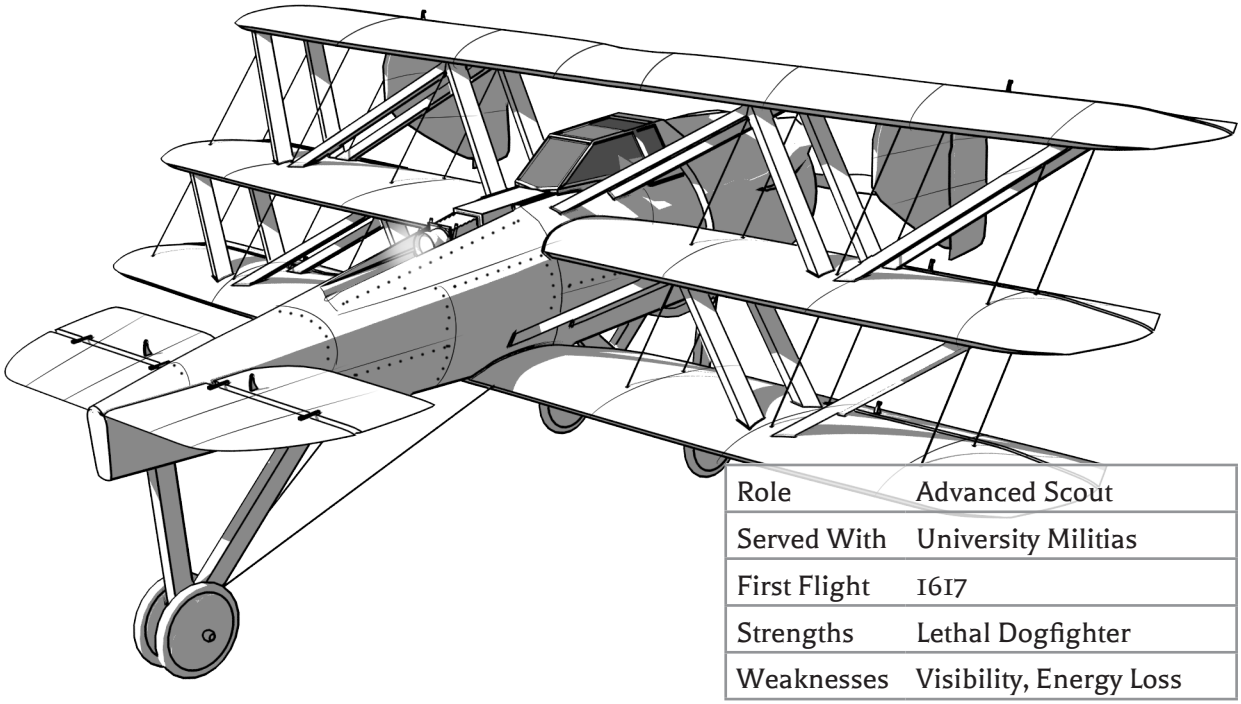
As Ritter planes became more common, Ratheanu planes soon found a new niche in balloon-hunting squadrons, using rockets to down observers before they could be winched out of danger.

The early model 9b and 9c variants are extremely common and put up a fair fight, and their secondary balloon-busting capabilities are greatly valued by pirates and the less reputable sort of circus.

Common Variations

- 9b: 90hp engine
- 9d: 130hp engine
- 11a: 9d w/ Wire Root, Fixed Fore Hull MMG

Aircraft Factory Link



Role	Advanced Scout
Served With	University Militias
First Flight	1617
Strengths	Lethal Dogfighter
Weaknesses	Visibility, Energy Loss

Gernsback Experiment 0012

52þ New, 26þ Used

2þ Upkeep

"A Vision of the Future"

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	102	8	11	17
Half Fuel	2	103	8	9	17
Empty	-	104	-	8	-

Vital parts

Engine, Radiator, Oil Cooler, Landing Gear, Gun, Controls, Fuel Pilot

Dropoff 13, Reliability -1, Overspeed 32, Altitude 0-29, Fuel 12

Visibility -3, Stability -1, Energy Loss 7, Turn Bleed 2

Toughness 11, Max Strain 38, Escape 0, Crash -1, Stress 0

Accessible Fore Heat Ray LRC, Telescopic Gunsight (+2 to attack if you Draw a Bead)
Armour 2/9+, Batteries (5 Charges), Alternator (2 Charge Generation)
Guncam (Automatically confirms kills)

There are very few new aircraft being invented, and fewer built as any more than one offs. But the demand is there, and aeronautics instructor Professor Ludwig Gernsback is a prominent name in that market.

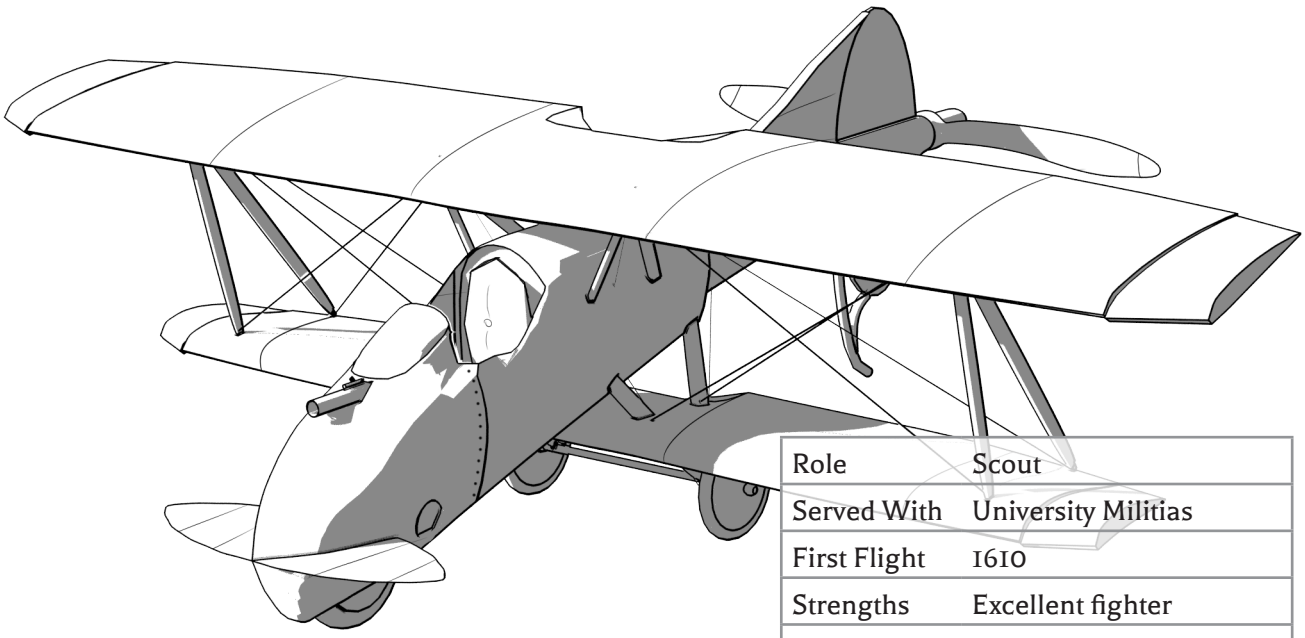
Dr. Gernsback believes that another conflict for the soul of Himmilgard is imminent, likely against the forces of the Goth Armies, and has been working tirelessly for ten years to develop a machine that will give an advantage against them. He believes the future lies in smooth airframes, pressurized cockpits, and the power of the heat ray, and designs his machines to match.

His grad students work tirelessly to assemble, test, and rebuild his increasingly large stable of experimental aircraft, often distributing them to other universities for testing. It isn't entirely clear if the numbers are serial numbers or production runs, but they are rare either way.

Common Variations

- 0011: Wings have Extreme Positive Stagger
- 0010: Wings have Extreme Positive Stagger, retractable gear
- 0009: Ejector seat
- 0007: Conventional covered Heavy Cannon

Aircraft Factory Link



Role	Scout
Served With	University Militias
First Flight	1610
Strengths	Excellent fighter
Weaknesses	Extremely unstable
Inspiration	*De Bruyère C 1 (1917)*

Das Gegenbeispiel

41þ New, 20þ Used

"What Not to Do"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	102	14	6	17
Half Fuel	2	102	14	5	17
Empty	-	103	-	5	-

Vital parts

Engine, Radiator, Oil Cooler, Landing Gear, Gun, Controls, Fuel Pilot

Dropoff 10, Reliability 0, Overspeed 25, Altitude 0-29, Fuel 8
Visibility +2, Stability -9, Energy Loss 4, Turn Bleed 1
Toughness 22, Max Strain 32, Escape +2, Crash -1, Stress 2
Accessible Fore Punt Gun High Offset Radiator

In a great many engineering institutions, a final test for prospective aircraft designers is to actually design and build an airplane, usually in conjunction with local artisan guides training craftsmen. Many of these designs are fairly safe, but some are unique, a few are groundbreaking.

But Vera Mauss of the University of Steinfurth has the dubious honour of making the most well known and influential. Attempting to impress her notoriously demanding professor, she delievered a machine that attempted to reinvent every aspect of aircraft design. The resultant machine flew for fifteen minutes before flipping and crashing hard.

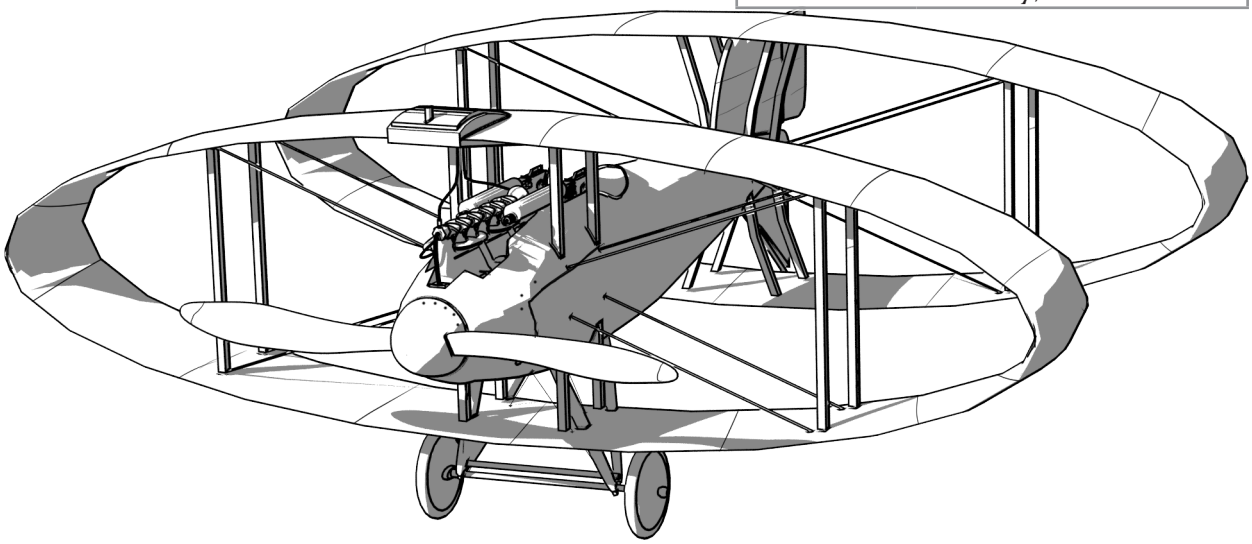
Vera's teachers began using the machine in their lessons as 'The Counter-example', an illustration of everything you aren't supposed to do.

Unfortunately, every year there's a joker who tries to make it work anyway, and so many of them have piled up in the workshop that the University has started selling them off, often at such bargain prices that even starving students can potentially afford them. The fact they are likely to kill their operators in a flat spin is often left out.

Vera Mauss went on to design the Mauss X-65, often seen as the best fighter of the post-war era.

Aircraft Factory Link

Role	Scout
Served With	University Militias
First Flight	1609
Strengths	Good all-rounder
Weaknesses	Visibility, Max strain



Universität Kobra M01

34þ New, 17þ Used

"The Final-Year Project"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	98	14	6	18
Half Fuel	2	98	14	5	18
Empty	-	99	0	5	-

Vital parts

Engine, Radiator, Oil Cooler, Landing Gear, Gun, Controls, Fuel Pilot

Dropoff 10, Reliability -2, Overspeed 24, Altitude 0-29, Fuel 6
Visibility -4, Stability +2, Energy Loss 4, Turn Bleed 1
Toughness 13, Max Strain 22, Escape +2, Crash -2, Stress 1
x2 Fixed Forward Accessable MGs, High Offset Water Radiator

The Kobra series, since it is so well known and well studied, is a common platform for experimental fits and Final Year Projects, the last make-or-break test of the engineering student. The idea of tandem annular wings has rather captured the imagination of the aerodynamics community in the last few years and many students have attempted investigations of the possible benefits.

So many of these aircraft have been built and studied that they are becoming something of a baseline in themselves, and some have received subsequent experimental conversions to create scouts that have little in common with their origins.

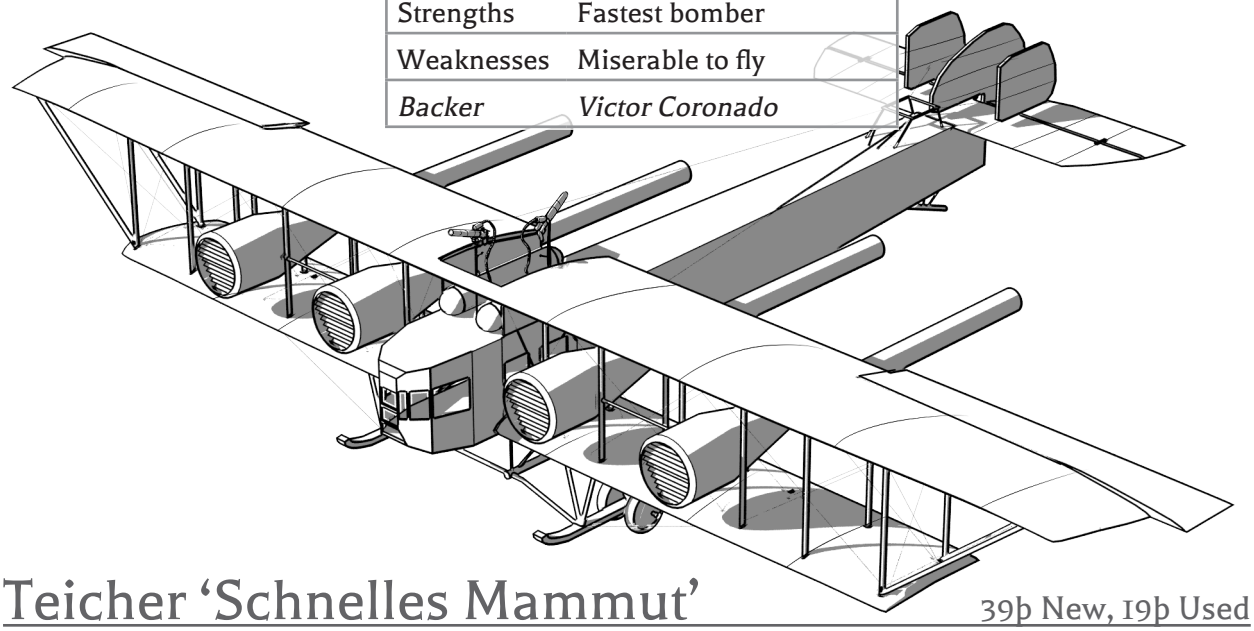
The Kobra-series are already known as extremely stable designs, but these tandem wing designs tend to be so stable that they are legitimately hard to fly, wanting to straighten out like an arrow. The generally accepted spin recovery procedure for these aircraft is to let go of the controls.

Common Variations

- Well Funded: Aluminium Skin wings.
- Lucky: Bertha F1466 Über Engine.
- Forward Thinking: Add 2 Microtanks.

Aircraft Factory Link

Role	Fast Bomber
First Flight	1601
Strengths	Fastest bomber
Weaknesses	Miserable to fly
Backer	*Victor Coronado*



Teicher 'Schnelles Mammut'

39þ New, 19þ Used

"The Bomber That Always Gets Through"

4þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	61	13	5	16
½, Bombs	4	68	13	3	16
Full Fuel	3	65	16	4	17
Half Fuel	4	70	16	3	17
Empty	-	75	-	2	-

Vital parts

x4 Engines, Fore guns, Aft guns, Controls, Fuel, Landing Gear

Pilot, Fore Gunner, Aft Gunner

Dropoff 10, Reliability -4, Overspeed 100, Altitude 0-29, Fuel 7
Visibility -2/-1/-1, Stability +2, Energy Loss 10, Turn Bleed 1
Toughness 20, Max Strain 34, Escape 0/+2/+2, Crash -1, Stress 2/3/3
36 Bomb Mass, Windmill (1 Charge), Battery (5 Charges), Pulesjet Engines (Page 192) x2 Turret Heat Ray LMGs (Fore/Up/Left/Right & Rear/Up/Left/Right)

The "Fast Mammoth" is one of the most famous Mammut variations, the result of an alliance between engineers at the University of Heidelheim and a team of reserve bomber pilots in the immediate post-war period. The bombers were trying to stop a rampaging Leviathan, but couldn't outrun its automated escort planes.

The solution of replacing the regular engines with four large pulsejets did allow the bombers to complete their mission, but wasn't without downsides. The range reduction and massive upkeep cost from replacing broken shutters were bad, but far worse was the experience of flying it.

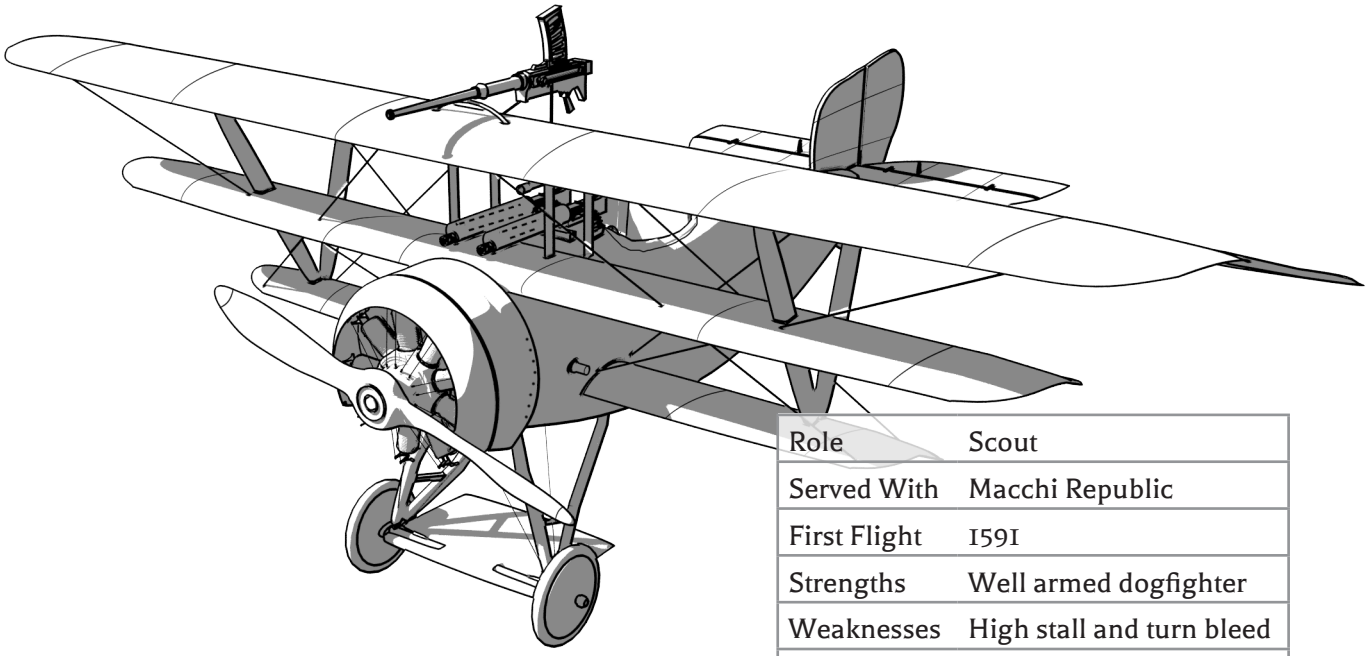
The noise, vibration, and heat has been described as being locked in a blast furnace during an earthquake. This rendered the machine useless as a cargo carrier or long range bomber, but deadly as a shorter ranged attack craft.

While it can't nessesarily outrun all interceptors in a straight-line fight, its speed makes safely intercepting much more difficult. The heat rays added help considerably.

Common Variations

- Schneller: Remove top turrets.
- Schnellest: also +Streamline, -Leg Room.

Aircraft Factory Link



Role	Scout
Served With	Macchi Republic
First Flight	1591
Strengths	Well armed dogfighter
Weaknesses	High stall and turn bleed
Inspiration	*Nieuport + Fokker DR.1*
Backer	*Matthew Lind*

Rathenau-16d

26þ New, 13þ Used

"Forgotten Gem of the Lift Wars"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	99	10	9	16
Half Fuel	2	99	10	8	16
Empty	-	100	-	7	-

Vital parts

Engine, Oil Tank, Landing Gear, Guns, Cannon, Controls, Fuel Pilot

Dropoff 9, Reliability 0, Overspeed 20, Altitude 0-29, Fuel 7
Visibility -2, Stability +2, Energy Loss 4, Turn Bleed 2
Toughness 5, Max Strain 25, Escape +2, Crash 0, Stress 2
x2 Fixed Forward Accessable MGs, Forward Wing Light Repeating Cannon Rotary Engine (+1 to Dogfight when turning Right)

The late 1580s and early 1590s were a time in scout aircraft design known as the Lift Wars, where experience in the war was teaching designers that the most vital thing for fighter aircraft was high lift. This lead to many aircraft with three or more wings, of which the Rathenau-16 was a runner-up.

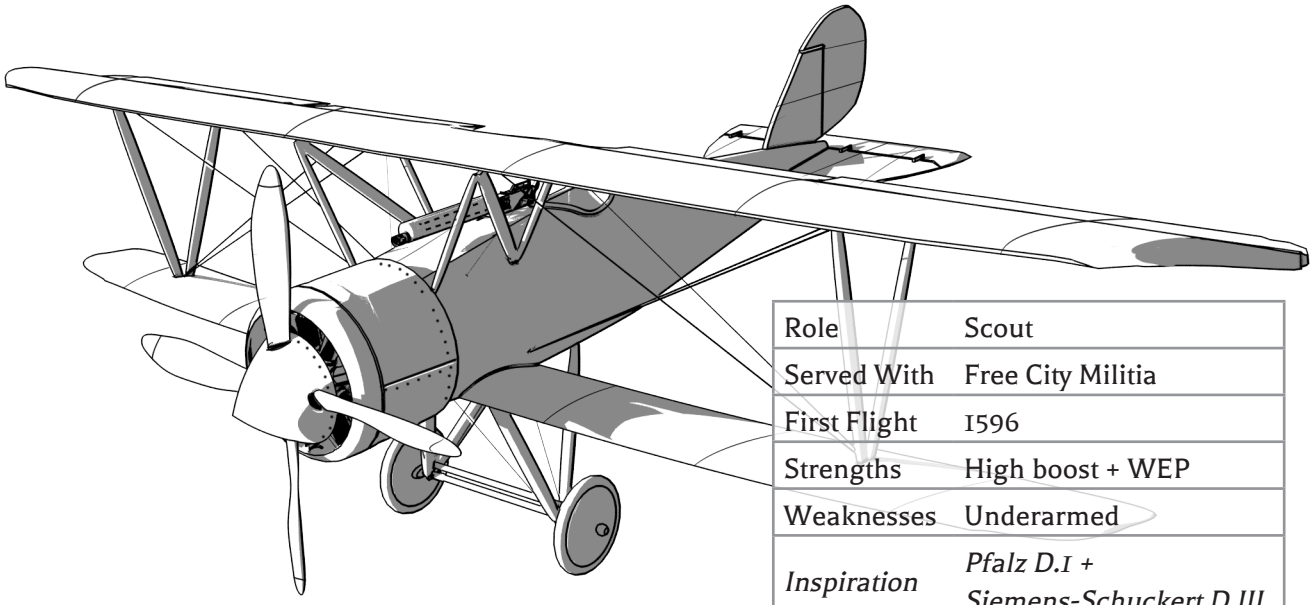
Though developed in parallel to the Ritter Model D, the Rathenau-16's development was interrupted by the fall of the UFW, and the resulting machine was released years later. It's unusual wing configuration was supposed to give the benefits of a sesqueiplane design and a triplane, though the machine is ultimately too stable.

Probably the single greatest advantage the machine has is the reinforced weapon mount above the wing, added at the last minute to try and given the plane more utility.

Weapon Loadouts

- 16a: Twin Accessable LMGs, Flex fore/up.
- 16b: Accessable Precision Rifle, fore.
- 16c: Twin accessable Scatterguns, fore.
- 16e: Mechanical balloon gun, fore.
- 16f: x4 accessable SMG, fore.

Aircraft Factory Link



Role	Scout
Served With	Free City Militia
First Flight	1596
Strengths	High boost + WEP
Weaknesses	Underarmed
Inspiration	*Pfalz D.I + Siemens-Schuckert D.III*
Backer	*John Evan Kerns*

Braun Model DC 'Puma'

33þ New, 16þ Used

"Odd-One Out"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	3	97	12	6	15
Half Fuel	4	98	12	4	15
Empty	-	99	-	3	-

Vital parts

Engine, Oil Tank, Guns, Controls, Fuel, Landing Gear
Pilot

Dropoff 13, Reliability -2, Overspeed 36, Altitude 0-49, Fuel 10

Visibility -2, Stability -2, Energy Loss 7, Turn Bleed 1

Toughness 11, Max Strain 22, Escape +2, Crash -1, Stress 2

Fixed Forward Accessible MG

Rotary Engine (+1 to Dogfight when turning Right), Altitude Throttle (Can WEP at altitudes 0-10)

Many of the small nations, principalities, and free cities of Himmilgard were at various times incapable of securing orders of warplanes from the major nations, making alliances and armed neutrality difficult. A roaring trade in knockoff designs soon followed, with the most popular being the Braun Model D, derived from the Theler Kobra series and often considered superior.

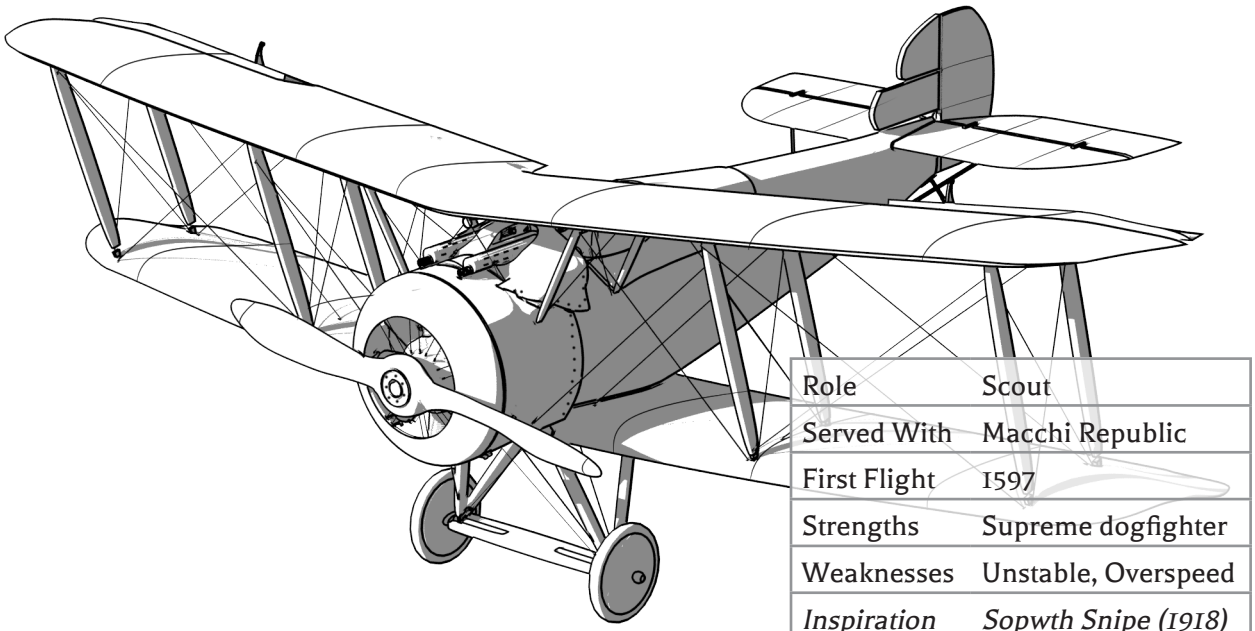
Of these, the DC is the odd one out. Unlike the others in its series, it is equipped with a remarkable engine: A large 'Contrarotary', where the engine spins one way while the propeller and crankshaft spin the other, reducing torque.

Furthermore, the machine was equipped with a large, four-bladed propeller, which gave it a frightening ability to recoup lost speed. The result was a machine that, while not fast, could hold a sharp turn at a fixed speed quite nearly indefinitely, and even gain speed while in combat turns using its unique double-throated carburettor.

Ersatz Model DCs

Sometimes, other marks of the Model D, or even Theler Kobras, are adapted into ersatz Model DCs by switching in a rotary engine and a High Power propeller. They are of dubious utility.

Aircraft Factory Link



Role	Scout
Served With	Macchi Republic
First Flight	1597
Strengths	Supreme dogfighter
Weaknesses	Unstable, Overspeed
Inspiration	*Sopwth Snipe (1918)*
Backer	*Tom*

Ritter Model S 'Finken'

38þ New, 19þ Used

"Astrid Ritter's Magnum Opus"

2þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	97	12	9	19
½, Bombs	3	98	12	7	19
Full Fuel	3	98	14	7	19
Half Fuel	3	99	14	6	19
Empty	-	100	-	5	-

Vital parts

Engine, Oil Tank, Guns, Controls, Fuel, Landing Gear, Electrics

Pilot

Dropoff 11, Reliability -1, Overspeed 21, Altitude 0-29, Fuel 8

Visibility -2, Stability -7, Energy Loss 5, Turn Bleed 1

Toughness 8, Max Strain 43, Escape +2, Crash -1, Stress 3

x2 Fixed Forward Accessible MGs, Telescopic Gunsight (+2 to Attack when Drawing a Bead)
2 Mass Bombs, Rotary Engine (+1 to Dogfight when turning Right), Oxygen Mask, 2 Charge Gen.

The last Ritter rotary, the Model S consumed nearly half a decade of the designer's life in perfecting it. A redesign of the Model F, improved in every way, the Model S carries the frightening W.O.3 230 horsepower engine. Both wings had to be restored to dihedral angels like on a Model C to compensate for the immense torque.

The Finken had aggressive turn characteristics, robust construction, and could outrun anything that could outturn it. Though they never completely replaced the Model F, it was soon known and feared by its enemies, and it was the last, best chance for the doomed Macchi Republic.

Though rare, many dogfight aces consider them to be the best rotary biplanes in the world. Few survived, most of them cut apart for the engines after Macchi surrendered, so each one is treasured.

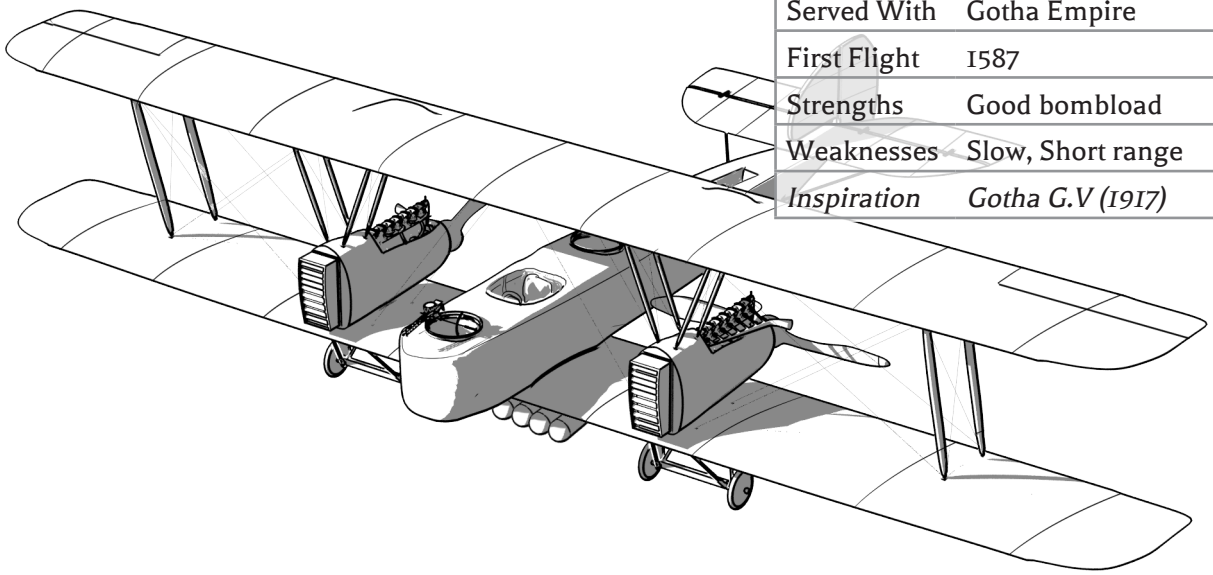
Model TF 'Elster'

The Finken was hyper-specialized for its role and employed for a relatively short time, and so few official variations exist. The most common is an armoured ground attack varation, used in the final sieges of the war to destroy guns and panzers.

To make a Model TF, add 6 Coverage 2 Armour, and double the ammunition for the main guns.

Aircraft Factory Link

Role	Strategic Bomber
Served With	Gotha Empire
First Flight	1587
Strengths	Good bombload
Weaknesses	Slow, Short range
Inspiration	*Gotha G.V (1917)*



Theler Eklipse ZD

60þ New, 30þ Used

"The Twilight City-Burners"

5þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	62	9	7	14
½, Bombs	2	66	9	5	14
Full Fuel	2	66	10	6	14
Half Fuel	2	68	10	5	14
Empty	-	70	-	4	-

Vital parts

x2 Engine, x2 Oil Coolers, x2 Radiators, Fore Gun, Rear Gun, Controls, Fuel, Landing Gear

Pilot, Fore Gunner, Rear Gunner

Dropoff 11, Reliability -1/-1, Overspeed 26, Altitude 0-29, Fuel 8

Visibility -1/-1/-1, Stability +1, Energy Loss 10, Turn Bleed 1

Toughness 20, Max Strain 20, Escape +2/+2/+2, Crash -1, Stress 2/2/2

36 Bomb Mass, Inline Radiators, Quality 10 Bombsight
Fore Gun: Turret Fore/Up//Left/Right Access LMG
Rear Gun: Turret Rear/Up/Down/Left/Right Access LMG

Stragetic bombing went from mere speculative theory to integral strategy of air warfare. Of the many vehicles used for this task, the Theler Eklipse was by far the most widespread, going through a large number of modifications over its service life.

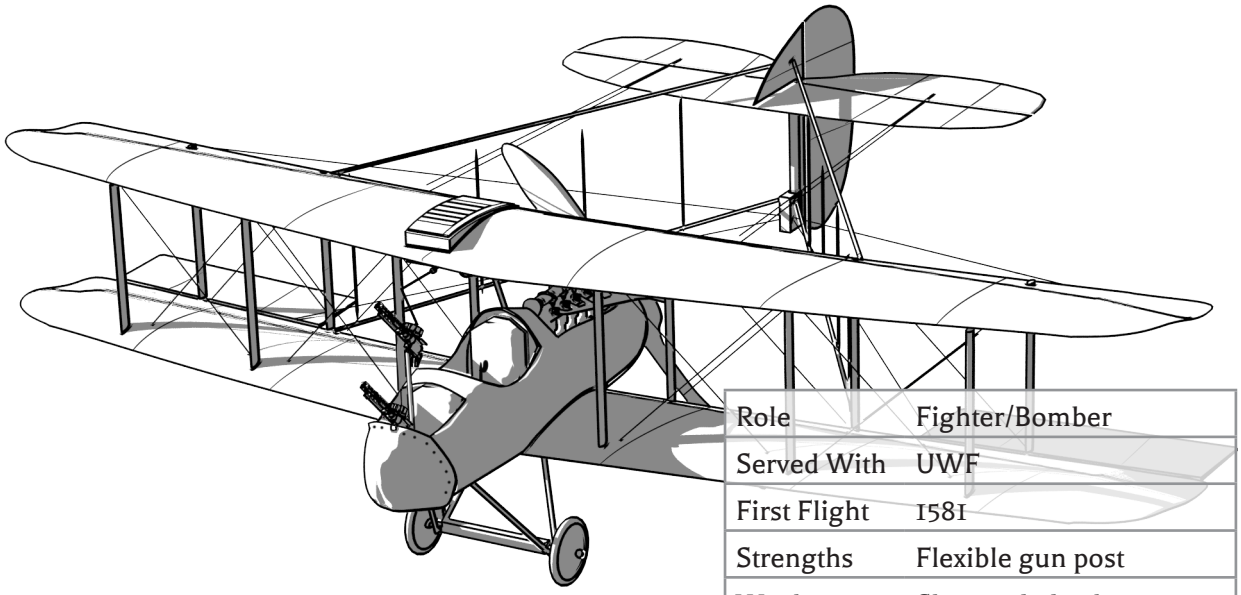
Originally, the Eklipse was developed to bomb the field outposts used to anchor UFW Air Destroyers in rural areas of Lohner, which were a constant thorn in the side of attacking forces. Their wild success in this role lead to them supplimenting bombing airships in attacking cities, industrial towns, and army bases, and soon they were being upgraded and widely produced.

Starting with the ZC model, the Eklipse gained a gun tunnel, a slot in the tail that gave the gunner increased visibility as well as allowing them to cover the area under the tail, traditionally where bombers are most vulnerable.

Common Variations

- ZB: Bertha F1466s, rear gun can't fire down.
- ZC: Bertha F1466Us, forward gunner replaces machine gun with 20mm cannon.
- ZE-1: 5 IAF superchargers on the engines.
- ZF: 28.8 litre, 8-cylinder Bertha F2080 engines for 330 horsepower. +2 Internal Fuel Tanks.

Aircraft Factory Link



Role	Fighter/Bomber
Served With	UWF
First Flight	1581
Strengths	Flexible gun post
Weaknesses	Slow and obsolete
Inspiration	*RAF Fe.2b (1914)*

Mitscher IG JA-81

26þ New, 13þ Used

"The Gunner's Perch"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	1	91	8	6	13
½, Bombs	1	92	8	5	13
Full Fuel	2	93	11	4	13
Half Fuel	2	93	11	4	13
Empty	-	94	-	4	-

Vital parts

Engine, Oil Cooler, Radiator, Flex Gun, Post Gun, Controls, Fuel, Landing Gear

Pilot, Gunner

Dropoff 7, Reliability -2, Overspeed 24, Altitude 0-29, Fuel 6
Visibility +4/+4, Stability -1, Energy Loss 7, Turn Bleed 1
Toughness 9, Max Strain 24, Escape +2/+2, Crash -1, Stress 1/1
8 Mass Bombs, High Offset radiator. Gunner controls all weapons. Flexible Fore/Up Access LMG, Omnidirectional Turret Access LMG

Johan Farmann's final design for WIG before his untimely death testing weapons mounts for Geistliche, the JA-81 essentially resembles an upscaled J-79.

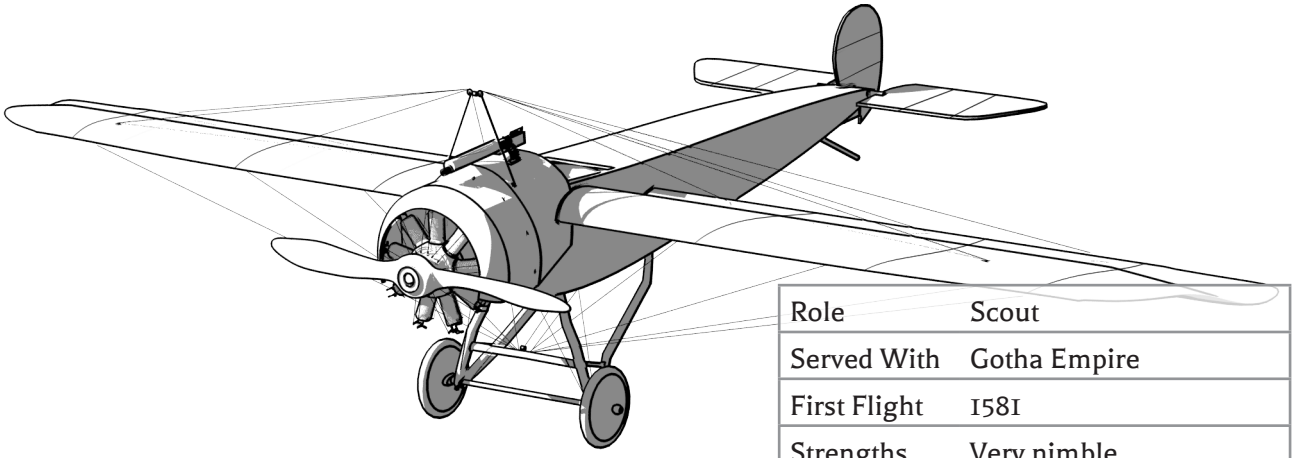
Intended for use as a fighter-observer, the aircraft was forced to resort to an inline engine rather than Farmann's preferred rotary due to stability issues, resulting in disappointing handling. However, the type was sturdy enough to stand up for itself in a fight and the gunner could gain an excellent field of fire by standing on their nacelle backwards and firing the pilot's machine gun astern meaning that a series of bomber variants were produced as well.

Ritter, flush with success from the Sperling, also licensed the JA-81 but only built a few hundred before focusing on Scout production.

Common Variations

- Ritter Kolkrabe - License Production. Removes the flexible gun, leaving just the gun post.
- A-81 - Gunner replaced by 5 Mass internal bomb bay, air brake added, x1 steel internal bracing
- JA-81/83 - Flexible gun replaced with fixed forward accessible LMG for the pilot.
- JA-81/87 - Wollsteinkraft Verteidiger C

Aircraft Factory Link



Role	Scout
Served With	Gotha Empire
First Flight	1581
Strengths	Very nimble
Weaknesses	Terribly slow
Inspiration	*Fokker Eindecker (1915)*

Arntwerks c.10

14þ New, 7þ Used

"Gotha's Standard-Issue"

1þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Fuel	2	103	10	6	14
Half Fuel	2	103	10	5	14
Empty	-	104	-	4	-

Vital parts

Engine, Oil Tank, Gun, Controls, Fuel, Landing Gear
Pilot

Dropoff 8, Reliability -1, Overspeed 20, Altitude 0-29, Fuel 7

Visibility 0, Stability -4, Energy Loss 4, Turn Bleed 1

Toughness 6, Max Strain 30, Escape +2, Crash 0, Stress 2

Fixed Forward Accessible MG

Wing Warping (+1 to Dogfight! when below 15 Speed), Rotary (+1 to Dogfight when turning Right)

Likely the single most common aeroplane in the entire world, the c.10 is a modification of an unarmed civilian craft, the c.8, equipped with a single gun and an interrupter gear. Thus, the first armed scout that was safe, reliable, and effective.

The c.10 was Gotha's standard scout, and there were many imitators. They were pulled from front-line service by the mid-1580s, but they were so inexpensive that they continued production as a militia plane. They may still be being made, given that Goth armies seem to have an almost unlimited supply of them, and desperate Circuses sometimes find themselves forced to fly them.

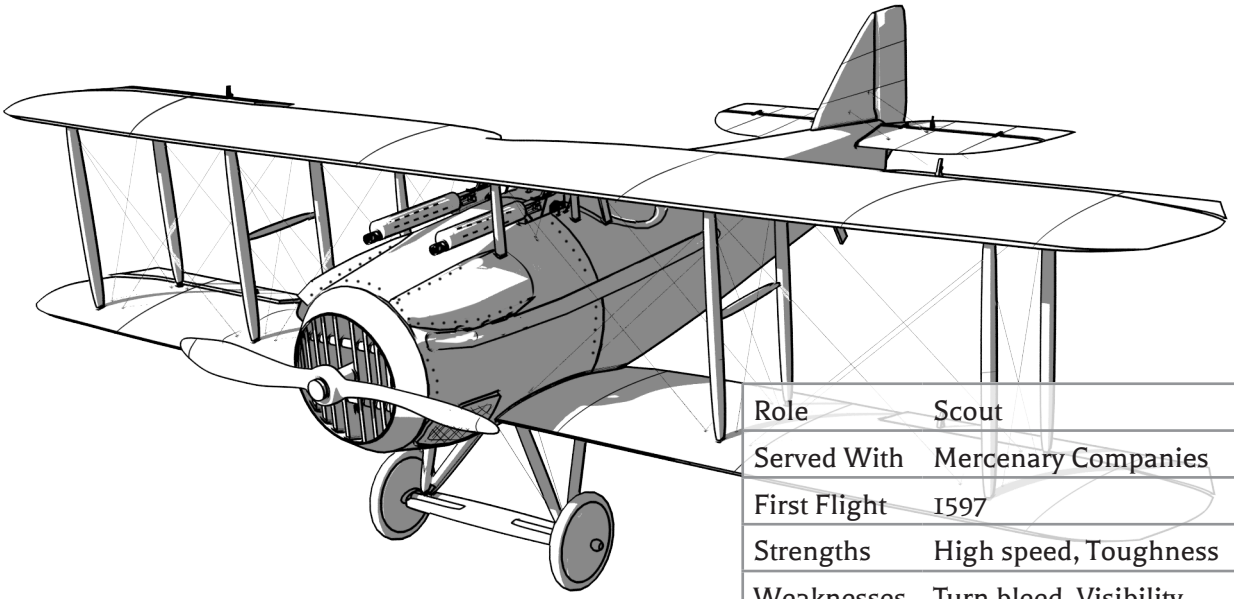
Variations

The c.10 went through many engines: the earliest used 80hp Rhona ZIIs. Modern Goth examples often use copies of the 130hp Schreiber B.IX.

c.11 Ace

A small number of c.10s were fitted with 170hp Rhona ZZ22 engines, a double-rowed ZII (21.8 Litre displacement, 18 cylinders in 2 rows) and attachment of two additional machine-guns. A small number were produced and issued to ace pilots and volunteers, but the huge torque made it nearly unmanagable. Planes were often given angled wings or new control surfaces to cope.

Aircraft Factory Link



Role	Scout
Served With	Mercenary Companies
First Flight	1597
Strengths	High speed, Toughness
Weaknesses	Turn bleed, Visibility
Inspiration	*SPAD S.XIII (1917)*

Saft & Altmann Motorbau 99

26þ New, 13þ Used

"An Engineer's Fighter"

2þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	95	13	11	22
½, Bombs	3	96	13	9	22
Full Fuel	3	96	15	10	22
Half Fuel	3	96	15	9	22
Empty	-	97	-	8	-

Vital parts

Engine, Radiator, Oil Cooler, Guns, Controls, Fuel, Landing Gear Pilot

Dropoff 6, Reliability -1, Overspeed 42, Altitude 0-29, Fuel 7

Visibility -3, Stability +3, Energy Loss 3, Turn Bleed 3

Toughness 11, Max Strain 49, Escape +1, Crash -1, Stress 1

x2 Fixed Forward Accessible MG, Telescopic Scope (+2 to Attack when Drawing a Bead)
Inline Radiator, 2 Mass Bombs (Internal, Max Size 2)

SAM was an engine manufacturer in Eisenfluss, a Free City in Daimler, building the popular Kurier V8 series for other nations. As war the war came to Daimler, they began producing custom aircraft for the Free Cities Alliance as well.

The SAM 99 represented the ultimate evolution of their scouts. It has many clever innovations, including a high speed propeller, internal bomb bay, and razor-thin multibay wings. The weight of the aircraft and staid, careful aerodynamics rendered made it a poor turning fighter, but the geared engine allowed it to outclimb, outdive or outrun nearly anything else in the air.

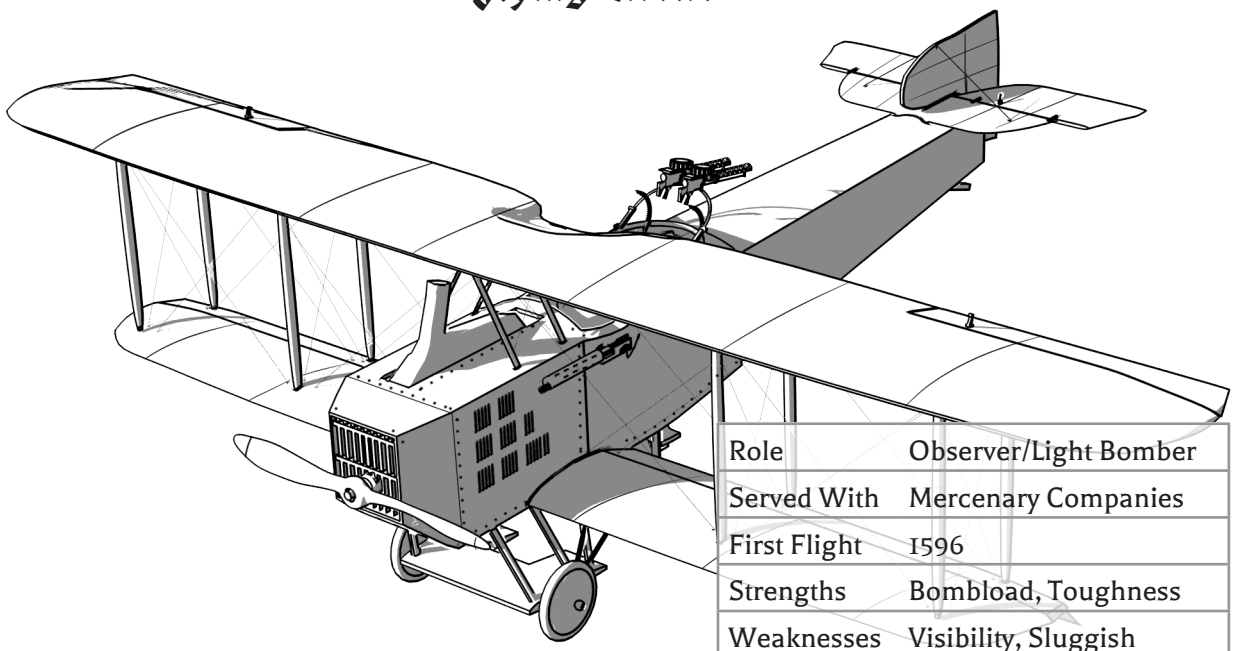
If is often said that a disciplined SAM 99 pilot is almost invincible, but a reckless SAM 99 pilot will ruin a beautiful aircraft as they die.

SAM.99 Motorkanone

Many SAM aircraft, including early SAM.99s, did not use machine guns. Instead, a 37mm cannon (HC) was mounted between the engine cylinders, firing through the propeller spinner. The breach protruded into the cockpit to allow reloading.

Though most replaced it with machine guns, some models instead mounted 20mm cannons in the same motorkanone configuration.

Aircraft Factory Link



Role	Observer/Light Bomber
Served With	Mercenary Companies
First Flight	1596
Strengths	Bombload, Toughness
Weaknesses	Visibility, Sluggish
Inspiration	*Bréguet 14 (1917)*

Saft & Altmann Motorbau 1144

61þ New, 30þ Used

"The Queen of the Skies"

3þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	85	14	4	17
½, Bombs	2	87	14	3	17
Full Fuel	3	87	16	4	18
Half Fuel	3	88	16	3	18
Empty	-	89	-	3	-

Vital parts

Engine, Radiator, Oil Cooler, Pilot Gun, Gunner gun, Controls, Fuel, Landing Gear

Pilot

Dropoff 7, Reliability -1, Overspeed 24, Altitude 0-29, Fuel 6
Visibility -3/-2, Stability 0, Energy Loss 6, Turn Bleed 1
Toughness 20, Max Strain 34, Escape +1/+1, Crash -1, Stress 1/1
Pilot: x1 Fixed Forward Accessable MGs, Collimated Gunsight (+1 Attack), Quality 4 Bombsight Gunner: x2 Rear/Left/Right/Up Access Turret LMGs. Inline Radiator, 10 Mass Bombs

The SAM 1144 used their massive SAM Transporter 300hp engine and was a conventional-looking light bomber, observer and auxiliary fighter. It is widely considered one of the best two-seaters in the world, with price being the primary drawback.

The austere styling of the 1144 again hides some impressive features, including an all-steel frame and passively-operated flaps that reduce its stall speed significantly. Its closest equivalent is perhaps the Markgraf Zerstörer, but while the Zerstörer is a better fighter, the 1144 concentrates on carrying a bomb load approaching a true bomber while retaining enough speed to challenge most scouts.

The toughness of the 1144 is legendary all on its own. Despite lacking cantilevers, the cross-braced wings and steel construction means aircraft have returned from missions with considerable structural damage, including missing pieces of wing or shattered spars.

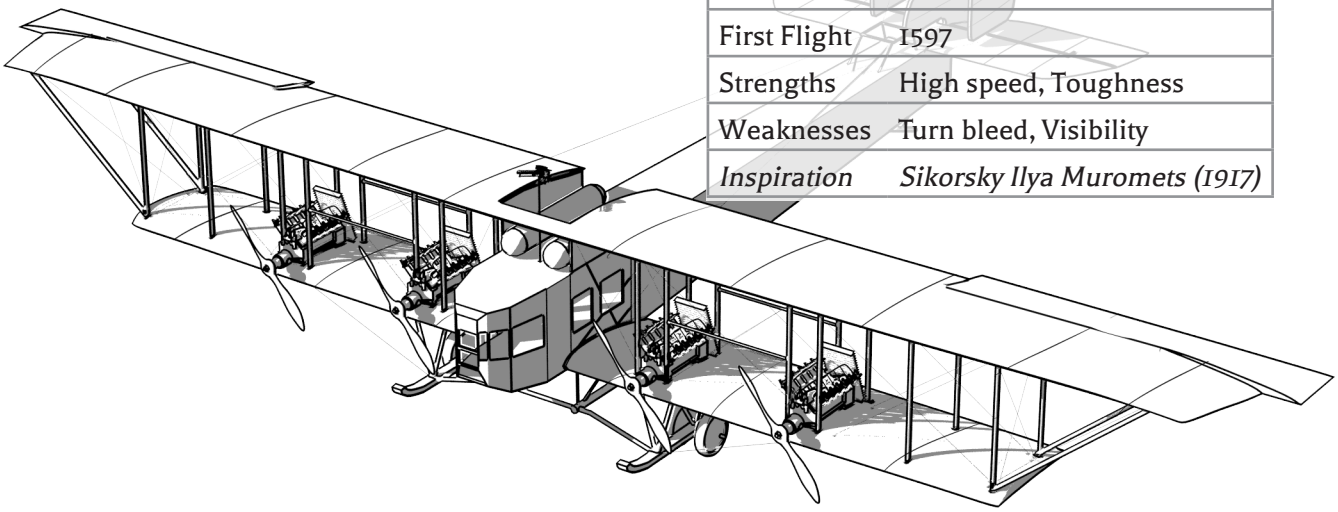
The most common complaint about the 1144 is one shared with most SAM designs, visibility. The exhaust pipe, often referred to as 'The Smokestack', sits dead in the pilot's vision for some reason.

Common Variations

- 1144-Sturzbomber: Replace flaps with air brake.

Aircraft Factory Link

Role	Strategic Bomber/Transport
Served With	United Western Federation
First Flight	1597
Strengths	High speed, Toughness
Weaknesses	Turn bleed, Visibility
Inspiration	*Sikorsky Ilya Muromets (1917)*



Teicher Mammut

42þ New, 21þ Used
6þ Upkeep

"Universal Carrier: People, Cargo, Bombs"

	Boost	Handling	Climb	Stall	Speed
Full Load	2	59	II	5	14
½, Bombs	2	64	II	4	14
Full Fuel	2	63	13	4	15
Half Fuel	2	66	13	3	15
Empty	-	69	-	3	-

Vital parts

x4 Engines, x4 Oil Coolers, x4 Radiators, Fore guns, Aft guns, Controls, Fuel, Landing Gear

Pilot, Fore Gunner, Aft Gunner

Dropoff 9, Reliability 0, Overspeed 29, Altitude 0-29, Fuel 17

Visibility -2/-1/-1, Stability +2, Energy Loss 10, Turn Bleed 1

Toughness 20, Max Strain 30, Escape 0/+2/+2, Crash -1, Stress 1/2/2

36 Bomb Mass, Inline Radiators,
Guns: Turret Access LMGs (Fore/Left/Right Up & Rear/Left/Right/Up)

The Teicher Mammut is famous as the first four-engine aircraft, but post-war it is often considered underwhelming due to the low power of its engines. The majority were retrofitted for passengers or cargo even during the war, and those still in combat use are drastically modified.

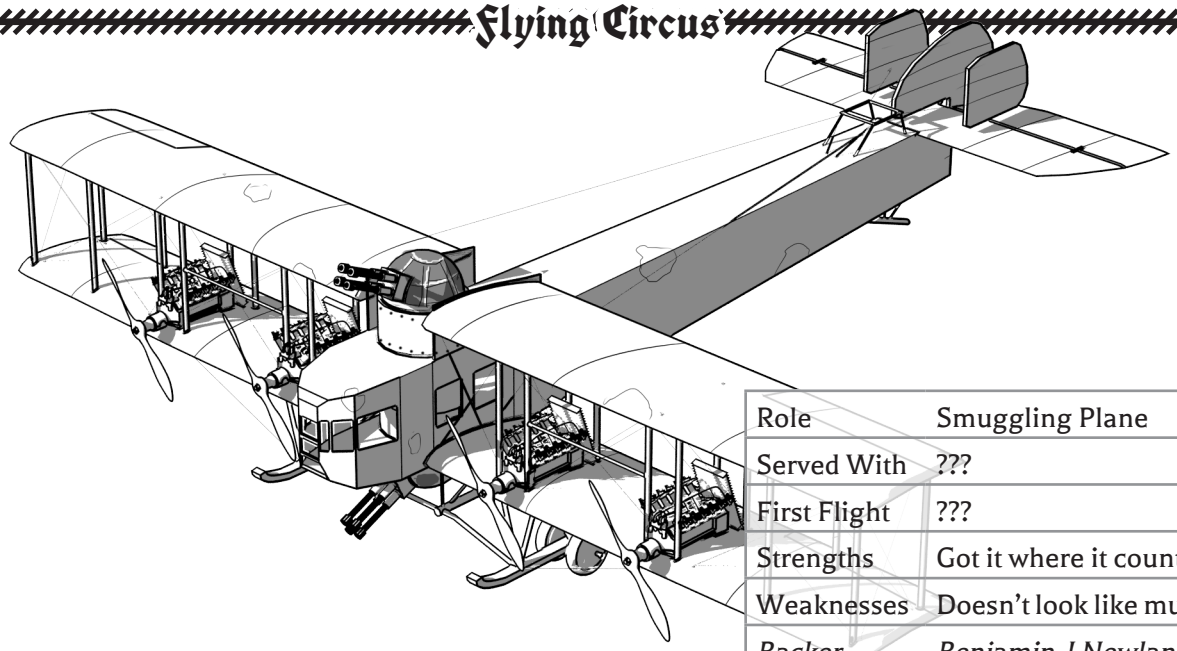
If you are a cargo driver, however, the Mammut has much to recommend it. The glass cockpit is comfortable to fly from for long journeys, the machine is easily reconfigured for goods or passengers, and the low powered engines are fairly easy to maintain. It's a very practical machine, if not a very powerful one.

Most Mammuts have one or two defensive turrets on the roof: The gunners climb up from the cabin to operate a pivoting gun on a stand to hopefully deter any opportunistic attackers. Wholly exposed, this position is popularly known as The Stake (*Der Pfahl*), a reference to the poles firing squad victims would be tied to for wartime executions.

Common Variations

- Transport: 2Large cargo bay or 10 passengers.
- One Stake: Remove second gunner position, remaining one fires forward.
- Free Cities Albatrosbomber: Engines to SAM Transporter 1s, x4 fuel tanks.

Aircraft Factory Link



Role	Smuggling Plane
Served With	???
First Flight	???
Strengths	Got it where it counts
Weaknesses	Doesn't look like much
Backer	*Benjamin J Newland*

Mammut Smuggler Custom

76þ New, 38þ Used

"What a piece of junk!"

7þ Upkeep

	Boost	Handling	Climb	Stall	Speed
Full Load	2	65	13	6	18
½, Bombs	2	69	13	5	18
Full Fuel	2	67	13	6	18
Half Fuel	2	70	13	5	18
Empty	-	73	-	4	-

Vital parts

x4 Engines, x4 Oil Coolers, x4 Radiators, Top guns, Bottom guns, Controls, Fuel, Landing Gear, Electrics

Pilot, Co-Pilot, Gunner, Gunner

Dropoff 6, Reliability -2, Overspeed 29, Altitude 0-49, Fuel 17

Visibility -3 all, Stability +2, Energy Loss 10, Turn Bleed 1

Toughness 17, Max Strain 50, Escape -1, Crash +2, Stress 0

Inline Radiators, Gyroscopic Autopilot, Copilot Controls, Connected Pilot seats, Medium Cargo
Guns: Turret Access x2 Gast BMGs (Firing arcs: All but Down & All but Up), 2 Charge Generation
Drogue Chute: Activate once per flight to: Give +3 to Go Down or take down a close pursuer.

Teicher Mammuts are among the most common cargo aircraft in the world now, as many were built by the UWF but few deployed in action. They are often further customized by their owners, sometimes to fairly staggering degrees.

This example is a rather impressive demonstration of this trend, designed to move small quantities of goods through unfriendly skies. Among the main modifications is aftermarket overcompression and supercharging on all engines, cut down wings for extra agility and speed, and the addition of two enclosed gun turrets, each carrying four eleven millimeter interlinked machine guns for defense.

This machine likely would have been used for moving medicine, narcotics, and people who wanted to evade interception. Smuggler vehicles like this were once a common sight in Himmilgard, a testiment to the lawlessness of the era.

Using the Smuggler

This isn't a vehicle to simply be sold to Circuses, but instead can be used as part of a campaign. Having to catch it before it escapes would be a good challenge for a small group, as would be stealing it and flying to to a client through dangerous skies. Alternately, a whole group could operate one together.

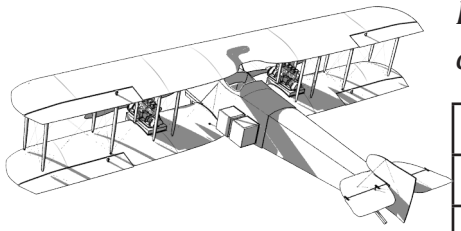
Aircraft Factory Link

Braun YA Post Runner

17þ New, 8þ Used

"Precious Lifelines"

1þ Upkeep



Undoubtly the most common sort of aircraft in the skies of Himmilgard are post runners, a ragtag mixture of disarmed obsolete fighters and purpose built mail planes like this one.

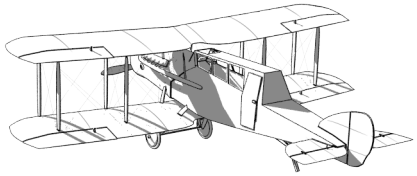
Max Speed	Stall Speed	Handling	Structure
15	8	90	21
1 Crew. 2 Engines. Low radiator. Small cargo space. 20 Fuel Uses.			

Markgraf Pegasus

22þ New, 11þ Used

"The People-Mover"

2þ Upkeep



With the end of the war, Markgraf returned to building public transit equipment, and as part of that transition, half-finished Zerstörer fighters were converted to fast short-hop airliners.

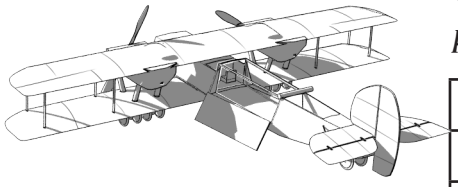
Max Speed	Stall Speed	Handling	Structure
18	6	92	38
1 Pilot, 5 Passengers. Inline radiator. 6 Fuel Uses.			

Recht Universal Transport

27þ New, 13þ Used

"Long Haul Transport"

3þ Upkeep



Logistics in Himmilgard is nightmarish at the best of times, with airships as the primary arm of transport. Small cargo planes like these often handle the final leg of these journeys.

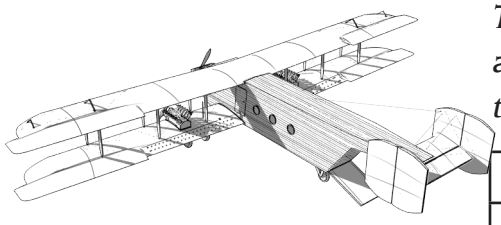
Max Speed	Stall Speed	Handling	Structure
17	12	84	50
1 Pilot, x2 Engines, High Radiator, 13 Fuel Uses Large Cargo Space, Altitude Autopilot			

Hugo's Halbmetall-Schwertransport!

113þ New, 56þ Used

"The Pioneer"

7þ Upkeep



The Fokker Kingdom was only able to maintain their war effort and holdings in the far north because of a robust system of transports, like these von Morgen copies of a Hugo design.

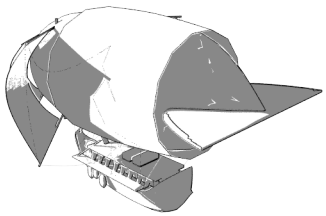
Max Speed	Stall Speed	Handling	Structure
16	10	65	100
3 V12 Engines, Low Radiator, 13 Fuel Uses 2 Pilots, 5 Passengers, Huge Cargo Space,			

Skyborn Dhow

20þ New, 10þ Used

"The Family Business"

0þ Upkeep



Skyborn convoys consist of a mix of small family ships like this, with crews of less than twenty, which can make short trips to small villages without risking the main convoy.

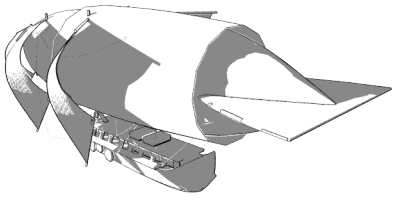
Max Speed	Lift	Handling	Toughness
1d10 + 3	55	90	20
Hydrogen. 4-12 crew. Large Cargo Space. x2 LMG posts. Randomize top speed each flight, add Wind penalty to speed.			

Skyborn Windjammer

40þ New, 20þ Used

"The Last Sailing Airships"

0þ Upkeep

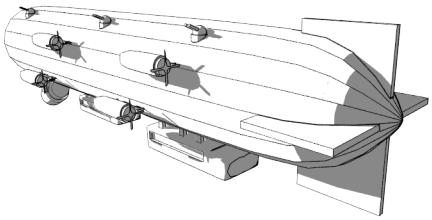


The use of whalebone keels allows the Skyborn to use fast sailing airships, minimizing their costs and maximizing the profits of trade missions.

Max Speed	Lift	Handling	Toughness
1d10 + 5	55	75	35
Hydrogen. 25-40 crew. Huge Cargo Space. x6 LMG or LRC posts. Randomize top speed each flight, add Wind penalty to speed.			

K-class Air Corvette

"The Border Watchmen"

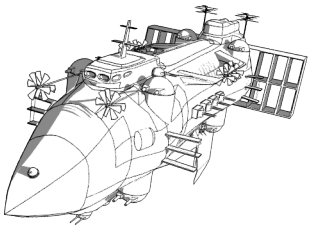


The UWF's fleet of compact battle airships was their greatest asset in the early war with Gotha. K-Class corvettes were the last of these, known for their heavy spotlight turrets.

Max Speed	Lift	Handling	Toughness
16	60	80	30
Hydrogen. 20-45 crew. x8 engines. Carries 2 small fighters. x6 twin MG turrets, forward Flak Cannon			

Jörmungandr-class Air Destroyer

"Ship of the Line"



The most common form of Air Destroyer in the war, forming the basis of the Gotha Empire's zeppelin fleet. A warlord repairing a downed Jörmungandr can threaten an entire region.

Max Speed	Lift	Handling	Toughness
12	60	40	100
Luftane. 100-250 crew. x6 Engines. Armoured Skin 2, Armour 4/5+. x8 Flak Cannons. Large number of machine gun turrets. Pushes Weather Flak against attackers.			